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THE

JOURNAL OF HORTICULTURE,

COTTAGE GARDENER,

AND

HOME FARMER.

A CHRONICLE OF COUNTRY PURSUITS AND COUNTRY LIFE, INCLUDING BEE-KEEPING.

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TO OUR READERS.

—o—

On the completion of another half-yearly volume of what our friends appear to take pleasure in describing as the "Old Journal," we should be wanting in courtesy if we omitted to acknowledge the expressions of goodwill and good wishes that reach us from readers, old and new, residing in various parts of the old country, and in the Greater Britain beyond the seas.

We have before us as we write a greater number of letters than we have ever received before in the same period of time, and from these letters, which are absolutely spontaneous expressions of opinion, we gather that the *Journal of Horticulture* was never more appreciated than it is now, and for this we are grateful.

While we thank all who evince interest in the welfare of this Journal—all who, finding it useful, incite to greater effort by encouraging words—and they constitute an overwhelming majority—the truth must be told that we thank with equal sincerity the few, the courageous few, who tell us in what way they think its pages might be made more interesting and more serviceable.

No doubt the gardener who wrote: "I think the Journal can hold its own as the best practical gardening paper of the day" expressed his honest opinion; but it was not more agreeable than this sentence from the letter of a nobleman:—"I have been hoping for months past to see something in your paper on packing flowers, for mine either come withered, or wither soon after they come. Cannot something be said on this subject?" Our noble friend had not long to wait, and something was said; then came the postcard response—"Many thanks; just what I wanted."

Testimony to impartiality is the more valuable since it comes from one who has had to meet, and has met ably, adverse criticism such as winners of great prizes have often to endure. From his letter we cite: "I think your paper improves, and I hope it may prosper, as it will do so long as you pursue your present impartial course, not to idolise some and 'sit upon' others." We shall undoubtedly pursue the course indicated. A fair field is open to all who till it profitably and pleasantly, avoiding the introduction of weeds in the form of literary thistles and stinging nettles. Sentences framed to cause pain are more injurious to the reputations of the authors of them than to the intended victims. "Strong" language cannot obscure weak argument, and usually denotes a tottering case.

The chief object of this Journal is to be useful, and no reader who may fail to find in its pages the precise information he needs can act better for himself, and more agreeable to us, than to make his wants known and his difficulties clear; then, so far as is possible, the former shall be supplied and the latter removed or reduced. Questions answered have been of service to many besides those who have asked them. Here is what one who has benefited writes: "You have answered many questions relating to gardening. I have always followed your directions, and am glad to say have always been successful." That is encouraging, but much must be credited to the aptitude of our correspondent in carrying out the instructions.

From the Antipodes letters are before us, and a brief citation from one of them from Otahuhu, New Zealand, must suffice as typical, namely: "Your journal is looked for with a great deal of pleasure; you are doing a good work, and may you long continue to do it." It shall be our endeavour to disseminate sound information, and to present matter of interest to our readers at home and abroad, and with the aid of valued coadjutors, competent in every branch of gardening, we doubt not the result. To all, of every rank and degree, who have contributed by their pens and their patronage in the production of this Volume, our best thanks are due, and are hereby cordially tendered.

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THE OPENING YEAR.

IN horticulture, as in other pursuits and affairs of life, there is no standing still. Movement is the indication of life, and it must be onwards or backwards, upwards or downwards, better or worse. To remain stationary, except in resting for renewed effort, means temporary stagnation, and the next step is not certain to be made in advance. By dint of energy and persistent endeavour, the position of the great industry with which our readers are more or less closely identified, has been well sustained during a period that has been the reverse of prosperous to many. In a pursuit embracing so many branches it is not to be expected that progress could be equal in the whole of them, or that it should be uniform in all districts. That department of horticulture which is regarded in the category of luxuries must of necessity be influenced in accordance with the means for indulging in it. These are dependent on the state of trade and other circumstances that affect the incomes of those whose inclinations lead them to devote a proportion to the maintenance of their gardens and the adornment of their homes and surroundings with the choicest gifts of Nature.

It cannot be denied that not a few persons have felt it prudent to reduce their expenditure in respect to other luxuries than those of the garden ; but, on the other hand, it is not the less certain that a greater number than ever indulge in the pleasures of gardening, and consequently there is no reason to doubt that the aggregate trade, however much it may be sub-divided, and having regard to all its branches, has seriously diminished. It has rested, perhaps, but only to be invigorated. It is observable, that no matter how intrinsically valuable, by rarity or beauty, plants may be, purchasers are forthcoming for their possession ; and also, having regard to that which is popular, never before was a brisker trade conducted. Roses and fruit trees are provided in ever increasing numbers, and there is a greater sale of fruit and flowers than at any past time. But purchasers are growing more and more discriminating in requiring value for money, and only that which possesses real worth finds favour in these utilitarian days.

Novelty without substantial merit has practically lost its charm. New Roses came in such numbers at one time, with great recommendations, but small virtues, that mistrust became engendered in the prolific raisers, and credit was slowly accorded to those varieties which proved essentially superior. It is the same with the flowers that are now freshest in the memory—Chrysanthemums. Taking advantage of the popularity of these, and the demand for distinct and meritorious varieties, continental raisers are inundating us with new sorts, depicted in glowing imagery, which when purchased and grown are found to be essentially inferior. This creates disappointment that eventually culminates in revulsion ; and the overhaste to get rich on the credulity of purchasers must sooner or later end in lost reputations. Speaking of Chrysanthemums and as indicating their growing popularity, it may be stated that one manufacturer of flower pots has increased his sale more than a million during the past season in consequence of the extraordinary increase in the cultivation of these plants. This is one instance of onward movement, and though some kinds of plants may have fallen somewhat in public estimation, the balance, taking a wide survey, is still in favour of progression.

The opening year brings with it signs of reviving trade. The clouds of depression are lifting and a brighter dawn is apparent, giving hope of better days. A steady and certain improvement in commerce leading to briskness of trade will affect beneficially the entire community. The corollary to the increase of wealth is increased expenditure, not alone in the necessities, but the luxuries of life, though to draw the line between the two would be no small difficulty. The production of what may be called or miscalled luxuries on the one hand means increasing the well-being and comfort of the producers. The circulation of wealth is for the benefit of all, and the freer this circulation the more certain are gardens to have their share. We like to see the thrifty man rejoice in the possession of a greenhouse, and the affluent erect ranges of glass proportionate to the circumstances of each case, as these, well furnished, contribute powerfully to human happiness ; and this we conceive is not to be described as a mere luxury. We like to see the delightful flowers of spring uprising everywhere, the summer Queen the Rose, and the autumn Queen above mentioned, with other intermediary flowers, in the gardens of the cottager, clergyman, and prince. We like to see fruit grown and cherished by the greatest number, and useful produce grown abundantly and well, because we believe those who indulge in these wholesome and health-giving pursuits are made happier, and the world better through their possession.

We like to see a taste cultivated for all that is pure and beautiful—for music, painting, sculpture, and various works of art—because the acquisition of this taste indicates intellectual advancement, which is not necessarily attained at the sacrifice of physical energy. Some of the most intellectual of gardeners are the most energetic workers, and the best painters amongst them are at the same time well in the forefront amongst the most successful Grape growers and general cultivators of the generation. But it is not of gardeners we speak in connection with the fine arts, but of capitalists who are patrons of them ; and it is pleasing to observe that, under the stimulus of trade revival, distinct activity is apparent in the world of pictures, for the best of which there is brisker demand, and the opening year is, in that respect, hopeful. That we regard as a favourable symptom as affecting the art of gardening, and we shall be much deceived and gravely disappointed if this does not receive a stimulus during the year on which we have just entered. We look forward for an increase of interest in gardening matters, and a steady improvement in the horticultural world.

It is not to be expected that prosperity will come with a bound. The period of inactivity in trade, commerce, and agriculture did not burst on the world suddenly, but came, so to say, stealthily, and its full import was not at once apprehended. What was regarded as a passing shadow proved to be a gathering cloud that spread and deepened as time rolled on. Its daily progress, like the growth of weeds, was not observable, but the movement was not the less certain, and only a lapse of time was requisite to show its real proportions. The same steady action in the way of improvement must be anticipated, and it is likely to be all the more sure and permanent for coming slowly, gathering strength by degrees, like the growth of a vigorous tree.

Referring a twelvemonth ago to the then past year of 1886 we observed, "It has not been a bright and prosperous one, and many a dark shadow will be cast over the future (1887) ; but better times we shall hope will come with brighter days, and it will be a gladsome circumstance if the past year shall have been the last of a series in which trade and commerce have been abnormally inactive, and if the year of rejoicing (over a great historical event) shall inaugurate an epoch of national prosperity. There are not wanting signs of recovery in trade, and there is good hope that the year on which we are entering will mark the era of better times for all." That was our hope expressed at the commencement of the year which has just closed ; and it is gratifying to perceive that the new year on which we are embarking has opened under better and

brighter auspices than have been recognised for a considerable time. There is reason to believe we have reached the bottom of the valley of depression and gathered strength for a movement that must be upwards, if we move at all, and, as observed at the outset, there is no standing still in the affairs of life.

But the upward path is all the same a rugged one. Obstacles will present themselves of a nature not easy to foresee, and those travellers who are the most prescient, and make the fewest false steps, will reach the goal of their desire the soonest. It is not necessary to dwell on what is an admitted fact, that integrity in trade is the only safe foundation on which to build successfully, and given a safe base of action the enterprise born of competition and experience will have the same results in the future as have accrued in the past in the establishment of famous centres of business and world-wide reputations. And it is the same in respect to those who serve. To serve faithfully, loyally, and perseveringly is to occupy a position as honourable as is to be found on earth. Some there may be, and are, who feel their services ill requited; yet nevertheless to relax in effort in the path of duty is a step backwards—a false step, that cannot possibly advance those who take it. On the young especially, or those of them who are apt to judge hastily, we would impress that truth, and if they act in accordance with it they will be better men at the end of the year than they were at the beginning. The greater the obstacles they encounter the greater will be the reward in surmounting them, and the day will come when they will dwell with pride on their perseverance and endurance while others fell by the way.

For ourselves we think we know our mission and shall endeavour to fulfil it. It is to advance the work in which thousands are engaged, because we believe it to be good and fraught with benefit to those who participate in it, while exerting a wholesome influence beyond its borders. We shall give aid where aid is sought, so far as it is in our power to do so; and as our resources have been tested in the past we do not think they will fail in the future; and our desire, as heretofore, in dealing with current matters is to be just and fair to all. That our work and labour is not in vain and unappreciated we have had much testimony, this being fairly embodied in the admirable communication of "A Yorkshire Amateur," which will be as welcome to our readers as to ourselves. To our patrons and helpers we tender our cordial greetings on the opening year, and trust it may be prosperous to all.

GREETINGS AND REFLECTIONS.

Once more the time has come when we make it a custom to convey to all our friends our good wishes—to press their hands a little more firmly, and to shake them a little more heartily than we do at other times. Once more, therefore, I emerge from my obscurity for the purpose of again offering the right hand of fellowship to all connected with the *Journal of Ho. ticulture*, readers, writers, editors, and proprietor.

Another year—it seems only like a few months—has passed away since I addressed you; and now we again stand, like a number of athletes, all ready toeing the line that marks the beginning of another race—another year. We are here at the beginning of it; who can tell where we shall be at its end? How many of us shall finish the full course? how many fall by the way? how many go down into silence and the valley of shadows?

It is the Methodists, I think, who open the proceedings at their annual conference by singing the hymn beginning,

"And are we still alive,
And see each other's face?"

Our first thoughts on finding ourselves still in the land of the living at the beginning of a new year should be a feeling of thankfulness that we are still spared by that Providence "that shapes our ends, rough-hew them as we may." Death has, as usual, been busy during the last year.

"Leaves have their time to fall,
And flowers to wither at the north wind's breath,
And stars to set; but all—
Thou hast all seasons for thine own, O Death!"

Death has gathered his crop; some ripe and full of years, falling calmly to sleep after a life of usefulness; others snatched away full of strength and youth in the midst of busy life and toil. Well, in my opinion, the best preparation for the time and the life to come is to "work while it is day." So ye dreamers, you who are always going to begin next year, or some day, seize the present hour; lose no time, for "there is no time like the present," and "time and tide wait for no man."

But stay! I fear my remarks have rather a melancholy tinge. This should not be so at the beginning of a new year. Perhaps the weather, when I sat down to write these stray thoughts, had something to do with it. Then the sky was dark and cloudy, but, as I pause here, a sunray rests upon the page. I look away to the hills, and there I see the whole landscape, a moment ago all dim and dark, now bathed in the rich warm glow of the setting sun. New and more cheerful thoughts arise—of the awakening of spring, of more light—the shortest day has passed now—of a renewal of energy, of new effort, new life, new hope. Just as this burst of sunshine has chased away the shadows, so we hope shall the warm spring days and the glorious sun drive away the dark winter weather, together with all gloomy thoughts from our minds, leaving in their place nothing but joyful and glad anticipations of the delights which spring and summer shall bring to us.

A special word to the proprietor and editors. The continued success of "our Journal" must be a source of gratification to you. That this success is well earned no reader of the paper can deny. As much depends on the selection of the material as depends upon the writing of that material itself, and it must be evident to all that this task of selection is performed with great care and attention. The plant you cultivate with so much pains and trouble is no barren one; it carries always a noble and heavy crop, and while ever it is conducted on the present intelligent lines, there is little fear of canker or decay in its circulation, or in any of its parts. Long may it flourish!

A word to the writers. Gentlemen,—Your communications are as valuable as ever. During the last twelve months much excellent matter, much interesting information, many useful hints have been published in the pages of "our Journal." It were invidious to pick out any where all have done so well, but just one word in your ear. Cannot you prevent your feelings from getting the better of you? Cannot you avoid the use of verbal brickbats and other similar missiles? Remember that "a soft answer turneth away wrath," and that we readers of the Journal want information on floral and horticultural matters. We want your experience on these, and we do not care to have to search for it among the personal bickerings of the combatants.

And now a word to my fellow readers. During the last year I have made the acquaintance of several of you. I have been where the Grapes grow (was that Gros Colman berry 2 or 3 inches in diameter, friend Taylor?), I have cemented the friendship of others far north and far south, east and west, through the post—by letter only, in fact. I have learned, too, that if one only does one's best and is content to write down his experience fairly and honestly, that the readers of this paper are ever ready to acknowledge his efforts. Here, then, to all friendly letter writers I gratefully express my thanks. Gardening still remains to me, as it ever will, the best, the most health-giving, the most satisfactory, and the most innocent of all my hobbies.

"Nature never did deceive the heart that loved her"

—and she never will. To many, Nature in all her aspects is lovely. In the budding and opening leaves of spring, in the flowers of summer, in the fruits and tinted foliage of autumn, and even in the bare branches, and the snows and frosts of winter, she is always beautiful. To me she reveals herself mostly in the Rose—"the Rose of brilliant hue and perfumed breath," which "buds, blossoms, dies, and still is sweet in death." To others she may do so in the favourite flower of each individual among us.

In conclusion, here's success to the Journal; here's success to ourselves; and here, offering a hand to everybody, is

A Happy New Year to all.

—Yorkshire Amateur.

HORTICULTURAL PROGRESS.

There is no doubt, Mr. Editor, good ground for the congratulations of the concluding paragraphs of your retrospect of the closing year. While the good old ship of Horticulture has, more or less, in the course of the past year, experienced stormy winds and heavy breakers, she has kept her head to the wind, and the records of her log book are not unsatisfactory. Let us hope that the year on which we have entered may leave you cause for still warmer congratulations, and justify you in eliminating from your

next yearly retrospect even the faintest tinge of sadness that the pessimist may be able to detect in some of your remarks, and at the same time justify the hopeful view you take of the future. Perhaps there is no other interest that feels the effects of depressed times sooner than horticulture. Nevertheless, those who can carry their retrospective glance back for half a century can testify to the immense progress that gardening has made, and how it has pretty well kept pace with the unexampled progress of the world's commerce. They cannot fail to be impressed with its immense expansion and the great change in its position and influence.

Fifty years since horticulture was but little thought of beyond the limits of the gardens of our landed proprietors. In the interval it has expanded and overflowed beyond its old boundaries to such an extent as might then have been considered extravagant to hope for. Now our wealthy merchants are perhaps the more extensive and ardent patronisers of the cultivation of fruits and flowers, and fortunately the love of gardening has captured to an extent, once never dreamed of, the hearts of the humbler million. No joyful festival, sacred or otherwise; no mournful event takes place without their floral accompaniments. Consequently as a commercial pursuit its growth has been amazing. Fifty years since there were next to no glass houses devoted to commercial gardening to be found except in our leading nursery establishments. These were exclusively devoted to supplying the then comparatively small requirements of the, already referred to, landed proprietors' wants. Now these old nursery establishments, though they have multiplied and expanded immensely, are insignificant compared to the acres of glass houses found in the suburbs of our great commercial hives devoted to the production of fruit, plants, and flowers, to meet the ever-increasing demands of those who are in "cities pent."

Though perhaps more slowly, yet none the less surely, the science and art of horticulture have made marked progress, thanks, to a very great extent, to the interchange of thought and practice carried on, chiefly by practical men, in the pages of the horticultural press—the progress and growth of which have been no less marked than that of horticulture itself. In all these respects there are many gains to be counted among a few losses, such as, among the latter, the many fine specimens of plants that are now seldom met with, simply because horticulture has become more a domestic necessity, and these objects, though many of them are gems, do not so well adapt themselves to the wants of the time.

All this, when at the same time the hybridisers and importers of plants have been placing new objects in the arena to keep up the interest, and the pot boiling at the same time. Much, or most of all this, horticulture owes to cheap glass, and to those marvellous triumphs of science, our "greyhounds of the deep," our steam marine. It would be unfair to leave our scientists and their labours out in the cold, and all they have done for us is duly acknowledged.

In the retrospect there are some points on which we cannot so freely congratulate ourselves, and they should be referred to as nuts for especially our scientific coadjutors to crack. So far as the improvement in our fruits is concerned, there has certainly been a multiplication of varieties that in some respects is not altogether desirable; but in the quality of fruits there seems to be but little or no gain, and it would seem that there are hard-and-fast lines in this direction that baffle human skill. Take, for instance, the Black Hamburgh Grape. In spite of all the attempts to improve on it, or to raise a black variety with fruits of superior merit, this old variety towers above all rivals for all-round first-class qualities. There has not yet been raised a black Grape that even approaches it. It can easily be placed in the dessert, for nine out of the twelve months. On no other can the palate fall back with such refreshing effect for a length of time without cloying. It has an almost, if not quite, an ideal physique, and it is as nearly faultlessly fertile as possible, and of no other Grape can all this be said. It would really seem that this and certain others of our old varieties of fruits defy the wit, the science, and the art of man to improve on them, and any admixture that can be introduced into their blood only deteriorates their quality. Mother earth seems by them to say, "You cannot extract from me or cause me to bring forth more good qualities in any one variety." Concerning white Grapes, the same remarks apply with equal force to the Muscat of Alexandria. Numbers of white varieties have been raised, but this old variety towers above them all in good points, and it can be placed on the table at least from July till March.

Grapes are not by any means the only fruit that seems to defy improvement. The old Queen Pine Apple stands unrivalled, taking it all round. The old, old Gooseberries that old men remember to have feasted on when they were "toddling wee things" are still the best, and would scorn comparison if they could with the coarser varieties introduced in the interval. Of Apples, many of the old sorts have never yet been equalled, and judging from the past are not likely to be soon excelled.

It would appear that no knowledge accurate enough has yet been attained that enables us to produce fruits that excel old types in more than perhaps one point or two, and these not of premier importance. Can this be a field that is hedged about with an impassable barrier, and is there a limit placed by Nature to the enhancing of many desirable qualities in one variety? Perhaps if our scientists had devoted as much of their time to this subject as they have done to malformation, they might have done something for us, and perhaps they might not. It is for them to tell us. Practical men seem baffled. Are we, then, to sit down quite contented with our old and best types or varieties and despair of getting any to excel them? It is sad to see the public tendency to prefer mere size to quality, for in the markets all good qualities must go to the wall in the face of size and perhaps colour.—D. THOMSON, *Drumlanrig*.

DISA GRANDIFLORA.

As the impression which I am afraid has been generally entertained, that the successful cultivation of this beautiful Cape Orchid is attended with some difficulty, becomes removed, its extended cultivation will be assured, as no garden should be without a few plants of this magnificent cool Orchid. It is sometimes described as the flower of the gods. To those who have only seen an isolated spike or two in bloom this may appear an exaggerated statement, but when seen in grand masses on the margin of streams on the Table Mountains as described by Dr. Harvey, those who have been successful in its cultivation in this country will be inclined to endorse the high encomium as being well deserved.

That the impression entertained of the difficulty in growing the Disa successfully is being removed is evidenced by the many more growers who are now taking the plant in hand and growing it well, Messrs. Backhouse of York being perhaps the largest and most successful. In order to attain to the greatest success in the cultivation of any plant it is useful to know something about its native home, but I think especially so in the case of the Disa—not that I consider it necessary or possible to reproduce all the natural conditions by artificial means, but the primary conditions must be borne in mind in dealing with the plants and reproduced as near as possible. Those conditions as regards the Disa cannot be better described than in the words of Dr. Harvey, who saw them growing on the summit of Table Mountain. "This summit is very frequently enveloped in the mist, especially at the season when the Disa blooms. It is very cold also, and the mist comes accompanied with a strong, cold, north-east wind; after this succeeds the scorching sun of lat. 33°. The plant only grows along the steep boggy, spongy margins of a stream which has water in it at all seasons, but which in winter must be so swollen as to cover the plant. The margin is completely clothed with the Disa, but immediately beyond is a margin of Restios, which bending over afford considerable shade to the roots and foliage, leaving the flower stalks room to peep out at the sun."

From this it will be seen that the three most essential conditions are—a moist atmosphere with abundance of water at the roots, slight shade in hot weather, and a low temperature. I am told the plant will not be injured by two or three degrees of frost, but I have no experience of this, and should be sorry to expose my plants to the grip of Jack Frost even for a moment. The best time for potting the Disa I have found to be about the middle of October; all the young growths after flowering will by then have appeared above ground, so that there is no chance of damaging them through inability to see them.

Our plants are divided every year (and are thereby considerably increased in number) and the strongest growths are potted by themselves, sometimes one in a 6-inch pot and sometimes five or six growths in a pan; but I find the growths succeed better in pots than pans. Perforated pots are to be preferred, and in potting the plants should be well elevated. The compost I find to suit them is sphagnum and peat in equal quantity (all the small sifted out of the peat), a liberal supply of small charcoal, and clean crock dust, the whole well mixed.

It is an advantage if the mixture can be prepared a few weeks before it is wanted. The position they seem to like is a cool airy one; here they are placed between a door and a ventilator, both of which are wide open when the weather is warm. In the winter the plants are watered once a week. About February, as growth commences, more water is given, and so on every week as the days lengthen, and as soon as the spikes appear they are watered three or four times a day. As showing that the plant is not difficult to increase, I may say that our stock, which now exceeds 200 plants, originated in one small plant a few years ago. The largest spike ever grown here was grown last year. It measured 3 feet 2 inches in length and had on eleven flowers. There are several forms of Disa grandiflora in this country, each claiming some superiority over the others in the brilliancy of colouring, but my experience

goes to show that even on the same spike the colour differs much in brilliancy, according to the time it has been in bloom and whether heavily shaded or not.

Through the courtesy and kindness of Mr. Gumbleton, Mr. Bedford, and Messrs. Backhouse, I have been enabled to procure pieces of their varieties, and look forward with much interest and pleasure to flowering them next July and noting the results.—O. T. C.

MELON GROWING MADE EASY.

Now that the season has come round again when the majority of Melon growers begin to prepare for their next season's supply of this much-esteemed fruit, I think a few notes on the cultivation, such as is carried out here, may not be out of place.

We are expected here to have the first fruit fit for table by the end of April, and to obtain that we find it necessary to make the first sowing on or as near as possible to the 1st of January. The seeds are sown in thumb pots filled with good loam mixed with a little leaf mould. We make a hole with the fingers to the depth of an inch or so, dropping in some sand, then put two seeds in and fill up level to the top with more sand. This we consider a good mode of preventing the seeds decaying. Supply at once with warm water, then plunge the pots in evaporating pans filled with leaf mould, and place them on the hot pipes as near the glass as possible. If the leaf mould is kept damp no further watering will be required until the plants appear, which occurs in a few days. We then place them on a shelf near the glass to keep them as dwarf as possible before potting, which is done as soon as the roots reach the side of the pot. If both seeds have germinated we select the shortest, and of course the strongest, plant for potting, pulling the other one out.

We now come to the potting, and first procure some clean 5-inch pots, crocked, and the soil mixed ready. Good yellow loam, a little leaf mould, Mushroom bed refuse, and a small quantity of sand added make a suitable compost, and it is placed in the Melon house at least a day before potting. Very little is placed under the plants, so as to allow them to be potted as deep as possible. Care should also be taken that the soil is not dry, as they will only require lightly syringing for a day or so. They are then placed on the shelf again, and as soon as they require it are tied to a light stake, as they are liable to snap in their young state.

Our attention is then turned to preparing the beds for them. We first make a small hotbed with leaves and good hot short dung, such as is used for Mushrooms, about a foot wide and 18 inches deep, then place some turfs of good yellow loam on the top, building up the sides with the same, then filling up with a mixture we prepare beforehand, composed as follows:—A cartload of loam chopped up, one barrowload of leaf mould, one of Mushroom bed refuse, also a small quantity of lime rubble, soot, and a sprinkling of Clay's fertiliser, native guano, or bone meal. The two first has been tried with success, the latter will be tried this year. We make this as firm as we can with a large potting stick, and this mixture can be strongly recommended to those who are troubled with black fly through the growing season, as it has been proved to be a great preventive of that pest, which, to my belief, is encouraged by the Melons being planted in too heavy soil. After the Melons have become well rooted the planting out is done. Three are placed to every light, as they produce fruit earlier than when grown on the extension system. We also plant them deep, burying them to the seed leaf, and then make a little mound round the stems composed of dry turf and soil, and when watering great care is taken not to water these mounds, so that in time they become quite dry, and so keep the stems from canker. With most Melon growers the rule is to plant as high as they can, but if they give the above plan a fair trial they will be pleased with the result.

A stout stake is placed by the side of each plant, and it is secured to the first wire, pinching off all laterals, leaving only the two nearest the wire, then pinch again until the leader has reached the top wire. There will then be found plenty of male and female flowers to make a good set of fruit. When setting the fruit, care should be taken not to syringe the plants the evening before, as if it is not bright next day the pollen will not be dry enough. In a day or two select the best fruits. If large fruits are wanted two will be sufficient to leave; if not, three will swell very well and make good medium-sized fruits. As soon as the fruits commence swelling supply the plants with liquid manure, as from then until the netting period is when they require most nourishment. Watering at all times must be attended to, on a fine day if possible, and early in the morning, and always with warm water, as otherwise the roots suffer and cause a great check to the Melons. They also like an even temperature, say from 70° to 75° at night and from 80° to 85° in the daytime, according to the weather out of doors.

Melons are subject to several pests. Black fly has been already alluded to. Red spider also often attacks them. The best remedy for the latter, I find, is to well syringe the plants with tepid water in the morning just as the sun begins shining on the plants. Mealy bug is another, the only remedy for which is to thoroughly cleanse the house in the winter and syringe it with strong petroleum and water, then taking care not to take any plant in the house with bug on it, as it is impossible to free them in the growing season from this pest, as the leaves are too tender for either sponging or syringing with insecticide.

In conclusion, I should like to name a few out of the numerous varieties there are now in cultivation, and that have done well with me under cultivation as recommended above. Hero of Lockinge I find to be a first-class Melon, one that should be grown by all, as it is always to be relied on as having a delicious flavour. Best of All and Scarlet Premier are very free and hardy, and when well grown of a good flavour. La Favorite is a good one, being free and well flavoured. High Cross Hybrid may be safely recommended as the easiest Melon to grow we have, and not one of the worst for flavour. I have obtained a seedling from Scarlet Premier crossed with the latter, and have no hesitation in saying that when it is well known it will become a favourite. There may be many more varieties good enough to be mentioned with these, but of all I have tried I much prefer these.—P. T. D.

FACTS ABOUT GRAPES.

ALICANTE.

Amateurs, as well as professional gardeners with only one vinery, usually plant Black Hamburgh, Foster's Seedling, Buckland Sweetwater, and perhaps Madresfield Court, only to find that none of these can be kept in good condition nearly so late as wished. The question then arises, and is very frequently put, What should be substituted for any of these in order to have Grapes as late, say, as Christmas? In such cases I always advise either planting or inarching two or three canes of Alicante, this being the only reliable and comparatively easily grown late variety that will do well under treatment similar to that given the Black Hamburghs. As far as quality is concerned the Alicante is inferior to Black Hamburgh, Madresfield Court, Lady Downe's, and Mrs. Pince, but is superior to either Gros Maroc as usually met with, Gros Colman, and Alnwick Seedling, and in addition is decidedly of very attractive appearance. It will bear almost as much bad treatment as Black Hamburgh, and, grown in the same house, will keep at least two months longer. The quickest way to establish it, in an already furnished vinery, would be to either graft or inarch it on Black Hamburgh, Foster's Seedling, or any Vines that can be best spared. There are several methods of accomplishing this, and if successful, a good fruiting rod may result the same season. It is too early to attempt anything of the kind, but those anxious to try the experiment should procure a few short lengths of the variety they require, bedding these in the open ground till the time has arrived for using them. We have tried various experiments in grafting and inarching with excellent results, and will describe these at a seasonable date.

To have the Alicante really good it needs more heat than is given to Black Hamburgh, but this difficulty can be partially obviated by either planting or establishing it by grafting at the warmest end of the house, and giving the least air there. As it is slower in arriving at maturity it is always advisable to forward by early starting or closing the house, say, by the end of February. If the house is devoted to both early and late varieties the end containing the former may be left open another month longer. In this manner it is possible to have all in flower at the same time, and a day temperature of about 65° with a fall of 5° by night will be beneficial to both early and late Grapes. A little fire heat is also of good service when the Grapes are ripening, this, if air is given night and day, invariably improving the quality of both early and late varieties. Without it they usually keep badly. The Alicante forces remarkably well, and I have seen it very good as early as July. At Badminton it is ripened or finished grandly by the first week in August, the quality also being above the average. Being the favourite autumn and winter variety, a long succession is secured by Mr. Nash, more Alicantes being grown than at any other private place probably in the country. "A Tourist" (page 380) has already alluded to the remarkably heavy crops of Alicante grown in a span-roofed vinery at Cardiff Castle, and on two occasions that I have seen this place I have been much struck with the extraordinary weight of bunches Mr. Pettigrew obtains without apparently injuring the Vines. In our case, overcropping results in the formation of small berries and late shanking. It is hard work cutting away so many promising looking bunches, but it must be done unhesitatingly if fine produce is aimed at. The finest bunches are usually formed

on well-ripened young canes, and the smallest on old closely spurred rods. We usually lay in a few young canes each season and prune the laterals on the reserved rods to a plump bud, even if this necessitates leaving a spur 2 inches or 3 inches in length. Those who market their surplus produce will find the Alicante much more profitable than the Black Hamburgh. The latter, if ripe in August, must be sold frequently at 1s. or at the most 1s. 6d. per lb., whereas the Alicante will keep plump and heavy till November, when it should be sold for about 2s. 6d. per lb. Both varieties lose weight by being kept long after they are ripe, and many berries also decay, hence the advisability of selling as soon as a reasonable price is offered.

GOLDEN QUEEN.

This, being raised from a cross effected between Alicante and Ferdinand de Lesseps, was expected to prove a desirable companion for the former. It was one of a very remarkable batch of seedlings raised by the late Mr. Pearson at Chilwell, and it was there I first saw and tasted it. As far as habit of growth, fruitfulness, and free setting are concerned, Golden Queen is all that could be wished for, but unfortunately it very rarely colours well, or if it does finish off a rich amber, this soon changes to a muddy yellow, which quite spoils the value of it. A hot summer appears to suit it well, our Vine ripening off a good crop without much fire heat. The berries were fairly large, more solid than usual, and of a decided Muscat flavour—in fact it was very crisp and refreshing, and I was therefore more vexed to observe the change for the worse early in November. Yet another trial will be given it. Grown in a house of mixed late varieties, it was one of the first to break and flower, and I hope to try it in an early house before finally discarding what should have proved an excellent amateur's Grape. The best coloured bunches I have ever seen were ripened on a forced pot Vine, and I would recommend it for trial to those who annually force a few Vines.—W. Iggulden.

(To be continued).



DENDROBIUM NOBILE.

I was pleased to see the article by Mr. Iggulden in your last issue, page 562, and to find he had been so successful with the pruning process. I had some fine growths this season of D. chrysanthum, but unfortunately I was not able to send a growth for you to see when they were at their best. One growth, which measured nearly 5 feet long, had eighty-two flowers on it, and most of the growths had from thirty to forty flowers. D. Pierardi, with me, has growths between 4 and 5 feet long.—Novice.

VANDAS FLOWERING LATE.

Under my charge is a small collection of Vandas, chiefly varieties of insignis, tricolor, and suavis, which, instead of flowering at their usual time, have been producing their spikes at intervals hroughout December, and have several expanding now. The plants are perfectly healthy, and I have been somewhat puzzled over this curious freak. The only conclusion I could come to was that the unusually hot summer must have checked them and caused a kind of premature rest, the succeeding moister weather of autumn having induced partial growth and flowering. I should like to know whether any of your readers have had a similar experience, and I shall be curious to see what will be the result another season.—W. L.

LARGE v. SMALL POTS FOR ORCHIDS.

Some remarks of yours recently upon this subject could, I am sure, be confirmed by many Orchid growers, and in my own experience I have had several examples of the evils attendant on excessive root space for these plants. This of course requires some qualification, as there are many of the soil-loving Orchids like the Calanthes that need liberal treatment both in the quantity and quality of their root supplies, but as regards most epiphytal Orchids it is almost without an exception. Many of the stronger-growing epiphytal Orchids when properly restricted in their root space can be safely supplied with liquid manure, and the results are then much more satisfactory than when the roots are spread through a large mass of material which rapidly becomes soured. The Dendrobiums of the nobile and Wardianum types show this in a marked degree, and Cypripedium insigne is similar in this respect.—J. J.

ORCHID NAMES.

It seems that efforts are being made to increase the confusion already so prevalent in Orchid nomenclature and to flood us with hosts of synonyms such as have rendered the study of botany distasteful to so many. After over one hundred hybrid Orchids have been named in accordance with botanical usage—namely, with Greek or Latin titles, is it not somewhat confusing to commence giving them English titles such as Mr. Smith or Mrs. Jones? With all due respect to the authorities, whoever they may be, I wish to enter my protest against the adoption of a system that is both inconsistent and inconvenient. Much outcry is made about the terrible difficulties attending the botanical designations of plants, but the fact is that a large proportion of these are more easily remembered and more euphonious than English names, and they have the advantage of passing current and being as readily understood in most European countries as in our own. When we receive a few from the Continent named after Herr Somebody with an alarming combination of consonants in his name, or Madame la Comtesse of somewhere or other with about fifteen syllables, the folly of the system we have adopted will become evident to all. Many of our names will be quite as difficult to our continental friends. After all, who grumbles at such familiar names as Rhododendrons and Chrysanthemums? while Rosa, Primula, Pæonia, and others are both simple and elegant. It is quite true that some botanists have with distorted ingenuity produced some fearful compounds, or have adopted very peculiar personal names for plants, but these are only the exceptions, and the evils that will attend any system at the hands of injudicious supporters.—An Old Orchid Grower.

WOODS AND PLANTATIONS.

At this season of the year it seems natural to turn our thoughts to the woods and plantations, a portion of the estate which generally now-a-days comes in for a small share of attention, owing in many instances to the reduction in the number of hands formerly employed. This is to be deplored from more than one point of view, as instead of it being a saving it is really in the long run almost ruinous. The actual value of an estate is greatly affected by the condition of its woods and the state of the timber growing thereon. If these have been kept in good thriving order it would most certainly command a higher price or rent than one, on the other hand, that had been very much neglected. The general character is quickly changed if due care and attention are not bestowed on such matters.

Objects of interest and beauty that were carefully studied by those who were in years past entrusted with the planting and laying out of grounds, at perhaps a very great cost, have been in some cases shut out of view by the unchecked growth of vigorous trees and shrubs, spoiling what was once esteemed for the beautiful vistas and landscapes. In another direction some unsightly objects are only too visible through the destruction of trees by gales, &c., originally planted to form a screen. A few instances like the above would soon change the whole tone and character of the most beautiful place; it would also tend very much to detract from its value, and point at once to neglect, which would in turn reflect a great amount of discredit on those who are responsible for their proper care, as it is evident if this course of things continue they must leave such places in a much worse state than they found them. Of course this applies more to the owner than those supposed to be in charge. If the former sees no interest in spending yearly sufficient to keep woods and plantations in a healthy thriving condition, those in charge ought not to be held responsible for circumstances over which they have no control.

Speaking of timber, I am afraid we are not following the good example set us by our forefathers. At one period there seemed almost to have been a mania for planting Oaks and Elms. The results of their labour we now enjoy in the grand specimens we see in the old parks of this country. It is a pity they cannot last for ever, as few can look on them without feeling a kind of proud satisfaction. Yet hundreds are cut down every year, and many others perishing through natural decay, and what a feeble attempt is made to replace them! It is true very large numbers are planted every season, but with a different object, I believe, than that which prompted those of old. Now they are packed in as close as possible to make a show at once, and christened belts and clumps, which are seldom attended to after as regards thinning. Such soon form a jungle, which can never be called ornamental, far less claim any value from the timber point of view.

No doubt the great numbers of coniferous trees that have been imported and raised in this country during the last fifty years have taken the place to a great extent of those which were used in olden times before the planter had such a selection, and while admitting the great beauty and value of many of these I feel sure they will

never last so many years and form such interesting landmarks as our British Oaks and Elms. The two latter are so closely associated with this country's history it would amount to almost a crime were they neglected to such an extent as to be termed a thing of the past, to say nothing of the injustice done to the future generations.

While this matter is worthy of the serious attention of all it does not perhaps affect the ordinary gardener so much as the general plantations of shrubs and ornamental trees in the pleasure grounds in close proximity to the residence. A few weeks or days at this season among such would find ample work for men who perhaps cannot get on with other work. This careful overhauling would in many cases be most advantageous, not only to the trees and shrubs themselves, but to all concerned, saving to a great extent the annoyance felt at the busy season at the sight of some of the most interesting features of the garden gradually being choked by stronger and less attractive occupants, and by the satisfaction of knowing that such work was done at the right time, thereby securing that beauty in the pleasure grounds which is of very great importance in all gardens large or small.—R. PARKER, *Impney*.

UNDER GARDENERS AND EXHIBITORS.

As your correspondent, "A Head Gardener," very truly observes, the above subject is a very large one, but I think in this way, as in all other relations of life, "Do as you would be done by" should be the rule to guide our course of action. I do not think there would be any likelihood of a successful exhibitor acting unjustly towards his subordinates if he would but remember what were his feelings on the subject when he was a young man.

Your correspondent makes much of the experience gained in growing plants, &c., for exhibition, and seems to imply that young men ought to consider this sufficient payment for all the extra labour and anxiety incurred. Perhaps so, but I am not inclined to consider this experience of such inestimable value, as it seems to me that in these days there is a greater demand for good all-round gardeners than for men who can grow a few things superlatively well. If I were starting life again I should avoid all places where exhibiting was carried on to a great extent, as it is not, in my opinion, in such places that a young man can gain the experience most valuable to him in after life.

But even supposing the experience is valuable, I contend that under gardeners are only human in expecting something more material. What is it induces exhibitors to compete? To some extent, perhaps, because of the honour and credit attached to winning prizes, but to a much greater extent because of the value of those prizes. If it were not so we should see as many competitors for a small prize as for a large one. It is all very well to tell young gardeners not to look at things from a pecuniary point of view, but to do their work for its own sake, &c. All very good in theory, but not so easy to practise when one is probably receiving a semi-starvation wage. I never yet knew a head gardener who would work for £2 a week if he could get £2 10s, nor an exhibitor who was as pleased with a 5s. prize as with one of the value of £10.

There are, I know, some gardeners who deal most generously with their young men in the matter of prizes. If one of them would be good enough to tell us what is his practice he might be the means of inducing others to follow his example, and thus create a better feeling on the subject. With regard to gardeners getting all the credit, I admit that this is not always so, but frequently it is the case. I have frequently heard successful exhibitors complimented and congratulated when the young men standing by were not deemed worthy a word of praise. Your correspondent was fortunate in having his merits recognised so early in his career. Week by week we read a report in the horticultural papers of some noted place. The report generally concludes by saying that the condition of things was a great credit to Mr. So-and-so, completely ignoring his assistants, without whom Mr. So-and-so, however clever, could do little. A small matter, some will say, but life is made up of small things.—AN UNDER GARDENER.



EVENTS OF THE WEEK.—To-night (Thursday) the General Committee Meeting of the National Chrysanthemum Society will be held at 7 P.M. in Anderton's Hotel, Fleet Street, to fix the time and place of the annual general meeting, with other important business. On Tuesday, the 10th inst., the Royal Horticultural Society's Committees will meet at South Kensington, and a general meeting of Fellows will also be held to confirm the resolutions passed at the last special meeting.

—— THE WEATHER.—A Scottish correspondent writes: "The weather has been similar to that of the preceding week—alternate frost and thaw. On the night of the 26th we had 7½° of frost, and 12° on the night of the 30th. Snow threatened on Saturday and Sunday, and over 2 inches have fallen during the night. The barometer continues to fall as it has done for the past few days. I wish all Journal readers 'A guid New Year. Muckle luck and little maen (moan).'"

—— A WELL-KNOWN Brighton horticulturist, MR. E. SPARY, died suddenly on the 27th ult. aged eighty-four years. For some years Mr. Spary had been proprietor of The Graperies at Brighton and had frequently taken a prominent part in the exhibitions at that town. He had been a subscriber to the Gardeners' Royal Benevolent Institution for thirty-seven years.

—— MR. BENJAMIN FIELD, 75A, Queen Victoria Street, London, has sent us a copy of his almanack for 1888. It is in monthly sheets, on which the dates and days are prominent, and contains postal and other information. These sheets are useful in the offices of gardens or other places for handy reference.

—— WE have received from the EASTERN TELEGRAPH COMPANY, 50, Old Broad Street, London, a paper knife, with an almanack on the handle and map of the world on the blade, which is as much as can be expected on an article of this kind, that also answers its purpose well. It is manufactured by Messrs. Waterlow & Sons.

—— PLANTING OUT POINSETTIAS.—Mr. A. Haggart writes from The Gardens, Moor Park, Ludlow:—"Most people like Poinsettias, but few think of planting them in a bed. The example sent is from a plant we have growing in a bed in the stove. It is bearing twenty-seven heads of blooms, twenty of them about as good as this, the others smaller. I shall be glad if you can tell me if they are often seen branching down the stem as this has done?" We have never seen a finer example than the one before us. The diameter of the head, measuring from the tips of the floral bracts, exceeds 17 inches, and the larger of these are 2¼ inches across, of great substance, and brilliant in colour, while on the stem below the head are eight branchlets producing flowers and bracts. Such examples are not common.

—— THE usefulness of ASPARAGUS PLUMOSUS in affording graceful foliage to be arranged with flowers is known to many gardeners, but the popularity of the plant is certain to increase for such purposes. The small side branches last a surprising time when placed in vessels of water in rooms, and we have some now that have been cut for more than three weeks and yet seem to be scarcely the worse. They are fresh, green, and will last much longer.

—— THE AUSTRALIAN ACACIAS are represented in British gardens by numbers of species, the majority of which are, however, only adapted for large conservatories, though a few succeed well in pots. Some 300 species are known, and there is a large living collection in the Royal Gardens, Kew, but many botanists will welcome the Iconography of Australian Acacias, a work which has been undertaken by Baron Von Mueller for the Victorian Government. A portion has already been issued, a lithographic quarto plate being devoted to each species. The monograph of the Eucalypti has afforded ample evidence of Baron Mueller's admirable method of dealing with botanical subjects.

—— A TREE that is comparatively seldom seen in British gardens SOPHORA JAPONICA, is better known in America under its pendulous form, and makes a very noble tree when fully developed. The whitish yellow flowers are in racemes. The finest specimen in Europe, M. André says, is probably at the village of Villennes on the borders of the Seine, near Poissy. This was planted 1795. It is in the middle of the public park there. The head has a spread of 133 feet, and is a proportionay height. The trunk has a circumference 13¼ feet.

—— A CORRESPONDENT of the "Garten Zietung" communicates some particulars of a specimen of THE JAPAN UMBRELLA PINE that is growing in the garden of Max Daniel Wolterbeck, Valkenburg, near Arnheim, in Holland. It was planted where it now stands, in a very exposed situation, twenty years ago, and is a healthy and beautifully formed tree. Moreover, it has never suffered in the least from frost or other climatal influences. Of pyramidal shape, it is nearly 13 feet high, with a circumference of a little over 21 feet. The year before last it bore for the first time two ripe cones, and the seed produced fifteen

seedlings. Last summer it bore only one ripe cone. Many other handsome Conifers exist in the select collection at Valkenburg. The soil is sand and peat.

—— GARDENING APPOINTMENTS.—Mr. Edward Burton, late of Lunefield, Kirkby Lonsdale, has entered on his new charge as head gardener to Dr. Tennant at the Great Hydropathic establishment, Ben Rhydding, near Leeds, where he will have scope for the exercise of his admitted abilities. Mr. J. Aslett, who was for upwards of five years under Mr. G. Norman at Hatfield Gardens, and also foreman at Lunefield Gardens for nearly two years, has been appointed head gardener to A. Harris, Esq., Lunefield, Kirkby Lonsdale, Westmoreland.

—— REFERRING to VEGETABLE MARROWS, Mr. J. Muir observes: "A correspondent at Kew sends me an interesting note on these. Amateur like, he kept a note of the produce of three different plants of three varieties, and the following was the result—Pen-y-byd thirty-five fruits, Long White thirty-one fruits, Improved Green Bush twenty-five fruits."

—— RAPHIDES IN PLANTS.—At a recent meeting of the Jena Naturalists' Society Herr Stahl read a paper of the significance of those excreta of plants known as raphides—*i.e.*, crystalline needles often met with in the cells in large quantity. From experiments he inferred that they were a protection to plants against being eaten by animals. Many animals avoid plants with raphides, or eat them reluctantly; and some animals—*e.g.*, snail species, in eating plants that have raphides, select those parts that are without the crystals. Many plants held for poisonous—*e.g.*, Arum maculatum, owe their burning taste simply to the very numerous raphides, which, forced out of their cells, enter the tongue and palate. The juice obtained by filtration has quite a mild taste.

—— MR. JNO. CAMPBELL, The Gardens, Mickleover Manor, Derby, sends the following records of the RAINFALL AT DERBY in 1870 and 1887, remarking that "the rainfall for the past year and the year 1870 totals so nearly alike I thought it might be of interest to your readers." 1870.—January, 1·43; February, 1·21; March, 1·72; April, 0·69; May, 0·73; June, 1·91; July, 1·32; August, 0·83; September, 1·13; October, 1·50; November, 2·00; December, 2·22. Total for the year, 16·69 inches. 1887.—January, 2·31; February, 0·27; March, 0·89; April, 1·21; May, 1·31; June, 1·12; July, 1·05; August, 1·75; September, 1·70; October, 1·54; November, 1·53; December, 1·56. Total for the year, 16·24 inches. Mean for the past eighteen years, 29 inches per annum.

—— FLORIDA ORANGES.—We have recently had some fine examples of Florida Oranges submitted to our examination, and the fruits were remarkable alike for their thin, smooth rind, and abundant sweet juice, much superior to the ordinary Oranges now in the market. They were grown in the Jacksonville district. Referring to this subject an American paper says: "A new undertaking in the fruit line is the shipment of Florida Oranges to Europe. The first lots were sent over on fast steamers last week, and others are being sent on every sailing day. During the months of November and December, the markets throughout England and Scotland have no supply of Oranges except immature and consequently very sour fruit from Spain and Italy. Florida Oranges ripen early, and will have practically no competition in foreign markets for two months. The transportation costs about fifty cents a box, which is less than the advance of English prices over our own. Orange tree planting has been carried to such an extreme in Florida that nearly all of the suitable land has been utilised, and groves have been planted even where the soil is not of a proper nature for this fruit."

—— WHITE SHREW MOUSE.—Mr. G. Abbey writes: "The Shrew Mouse is a well known pretty little animal, the formation of its hair as seen under a powerful microscope is very beautiful. In turning over a manure heap in the park an albino, or white variety of this interesting vole was found (December 23rd). It is one of the prettiest creatures I have ever seen, very lively, and very clear in colour, having the yellow tinge next the skin as present in most white-haired animals, and in white-feathered birds, otherwise it is of snowy whiteness without speck. It was found next to the soil beneath the manure, which is rather dry and littery, no doubt in quest of food, grubs, &c. White Moles I know are not uncommon, but this is the first time I have seen or heard of a White Shrew Mouse. I thought it might interest some of your readers if it be worth recording."

FICUS ELASTICA VARIEGATA.

THOUGH this plant is not new, it is not common, and when well grown is unquestionably beautiful. We first saw it at one of the Liverpool shows a few years ago. It was exhibited, if we remember rightly, by Messrs. R. P. Ker & Sons, and was awarded a first-class certificate. Since then the plant has gradually spread and found its way into several collections, though it is by no means seen everywhere; yet it appears to improve on acquaintance, and we know has been bought freely by some growers who anticipate it will prove good for the market and the million. In its early stages the variegation is not very clear, but the greenish yellow portions change with age to creamy white, and when the plant is healthy and the normal colour rich and deep the contrast is highly effective. The specimen figured was grown by Mr. J. Forbes at Dover House, Rochampton, where so many other things



Fig. 1.—Ficus elastica variegata.

are done well, and the gardens of J. S. Morgan, Esq., are among the best kept in the kingdom. Ficus elastica variegata is valuable for decorative purposes in halls, rooms, and conservatories, and is suitable for arranging in effect groups at exhibitions.

MRS. PEARSON GRAPE.

HEREWITH I send you a sample of Mrs. Pearson Grape, that we are bottling to-day, in order that you may judge of their appearance and quality; but what I wish to make more generally known is the long keeping qualities of this Grape. We can keep it good well into April, it will finish a much heavier crop than Trebbiano or White Nice, and unlike those varieties is useable when ripe in autumn. The bunches are more compact and handsome, they are also of a more desirable size. We have had them 4 lbs. in weight. I am having a photograph of one taken which, when completed, I will forward to you, also one of our Gros Colmans, which are very large, but the colour is not quite so good as usual. I will give a description of their culture when I send the photos.—J. H. GOODACRE, *Elvaston Castle Gardens.*

[The bunch of Mrs. Pearson is full, well shouldered and handsome,

and the berries of uniform size, about 3 inches in circumference, juicy, luscious, and refreshing. We shall be glad to inspect the photographs referred to, and to publish the cultural notes obligingly promised. Mr. Goodacre has exhibited the largest Gros Colmans we have seen this year.]

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Rev. W. Wilks, Shirley Vicarage, Croydon.
Major Lendy, F.G.S., F.L.S., Sunbury-on-Thames.
H. Herbst, Kew Road, Richmond, Surrey.

SECRETARY.

Archibald F. Barron, Royal Horticultural Society, Chiswick.

Baines, Thomas, Fern Cottage, Palmer's Green, N.
Ballantine, H., The Dell Gardens, Egham.
Bates, W., Poulett Lodge Gardens, Twickenham.
Bennett, H., Shepperton, Walton-on-Thames.
Cant, B. R., Colchester.
Dean, R., Ranelagh Road, Ealing, W.
Druery, C. T., 10, Philpot Lane, E.C.
Dominy, John, 11, Tadema Road, Chelsea, S.W.
Duffield, G., The Gardens, Bramford Lodge, Winchmore Hill, N
Fraser, John, Lea Bridge Road, Leytonstone, E.
Goldring, Wm., 52, Gloucester Road, Kew.
Hibberd, J. Shirley, 1, Priory Road, The Green, Kew.
Hill, E., The Gardens, Tring Park, Tring.
Holmes, W., Frampton Park Nurseries, Hackney, E.
Laing, John, The Nurseries, Forest Hill.
Lowe, Dr. W. H., Woodcote, Inner Park Road, Wimbledon.
Masters, Maxwell T., M.D., F.R.S., Mount Avenue, Ealing, W.
Nicholson, G., Royal Gardens, Kew.
Noble, C., Sunningdale Nursery, Bagshot.
O'Brien, James, West Street, Harrow-on-the-Hill.
Paul, George, The Old Nursery, Cheshunt, Herts.
Pilcher, Charles, 84, Ringford Road, West Hill, Wandsworth, S.W.
Pollett, H. M., Fernside, Bickley, Kent.
Walker, J. Whitton, Middlesex.
Wildsmith, W., The Gardens, Heckfield Place, Winchfield.
Wynne, Brian, 17, Catherine Street, Strand, W.C.

PACKING FRUIT.

IN many, indeed in most gardening establishments in the kingdom, fruit has to be packed regularly once or twice a week during certain seasons, and often sent long distances both by rail and boat for the family use. In any case when fruit has to be sent either for short or long journeys it cannot be packed too carefully, for unless it is properly packed, no matter how excellent the fruit may be, it will be sure to come to grief before it gets to its destination, and give dissatisfaction to the employer and much annoyance to the gardener who is responsible for not having packed it properly. Some gardeners of considerable experience use dry soft moss for packing in preference to any other material, while others recommend paper shavings and cotton wadding as suitable material. For general packing, and for mixed fruits, including Pine Apples, Melons, Apples, Pears, Lemons, Cucumbers, Tomatoes, Grapes, &c., all to be packed in one box, I use soft hay made from grass about 6 or 7 inches long. I have packed with this for many years, and I find it answers the purpose better than anything I have ever tried. Grass to make this packing material can be found in sufficient quantity in every place in the country where there is a lawn or grass banks, which are kept short by mowing. The same cannot be said in favour of procuring moss, as it is not in every place that good packing moss can be found in a sufficient quantity for that purpose.

We make the hay as follows:—After the grass has been cut the first time in the season a piece is selected, and allowed to grow to the height of 6 or 7 inches, when it is cut and made in the usual way, but it is thoroughly dried before being stored away to prevent it heating. The hay is soft and flexible, and if returned in the empty boxes (as in my case) it improves in quality, and will last for a long time in good condition fresh and free from dust. If it should get a little damp at any time it can be put out in the fresh air on a fine day and turned over several times, when it will soon dry and regain elasticity.

In packing, the Pine Apples, Melons, Tomatoes, and Cucumbers are rolled singly in paper and tied with string. The bottom of the box is covered with about an inch of hay and the Cucumbers placed flat at the bottom, then Melons and Pine Apples follow, and are all packed tightly by filling up every little space between the fruits, so that the box may be turned upside down without fear of the contents falling out. About another inch of hay is spread over these, and the surface made level, when a layer of Apples or Pears—as the case may be—are packed neatly, and all the interstices between filled up tightly, so that the fruit cannot move in any direction. Another layer of hay is added, and the fruit packed in the same way until the box is filled. I always leave sufficient space for the Grapes at the top of the box to finish with in the

following way :—About 1½ inch of hay is spread over the bottom of the space left, and four sheets of packing paper are broken up and made soft by rolling them in the palms of the hands. These are spread so as to cover half of the space at the bottom, and the other half to hang over the sides and ends of the box for turning over and packing in on the opposite sides when the packing is finished. A sheet of tissue paper is then spread over the bottom and up the sides, and the largest bunches of Grapes are placed in the four corners and wedged in with smaller bunches in the middle, and all are packed as closely together as possible. When the box is full another sheet of tissue paper is spread over the top of them and tucked in at the sides. The paper hanging over the sides is tightened and turned over and packed down on the opposite side, and the spaces between the sides of the box and the paper are packed as firmly as possible, so that it is impossible for any of the contents to move, no matter in what position the box is turned. Sufficient hay is packed on the top of the Grapes to render a little pressure necessary in screwing down the lid. The box is then roped, labelled, and despatched some 400 miles by rail and twenty by sea, after which it has to be conveyed some five miles by cart before reaching its destination. I have practised the above system of packing for the last twenty years, and I have never had a complaint made during that time of the fruit arriving in bad condition. Indeed, I have been told repeatedly that the fruit arrived in splendid condition, and that the Grapes looked as fresh after the long journey as if they had been newly cut off the Vines.

Peaches are packed by themselves in tin trays, which hold two dozen each. The tray is divided into compartments and the fruit packed singly. A little hay is placed in each compartment and the fruit rolled in tissue paper, then enveloped in cotton wadding, and dropped gently into its compartment, and the corners packed with hay. The trays are dropped into a neatly fitting box, which hold three, and the lid screwed down tightly to prevent oscillation, which is all the packing necessary to insure them for travelling long journeys without injury.—A. PETTIGREW, *Cardiff*.



THE SEEDLING BRIAR.

MR. W. R. RAILLEM'S article on Roses in the last number of the Journal was very interesting, and I read it with pleasure, as doubtless did many others, but I should like to correct a common error in connection with the seedling Briar. It is said that it sends its roots down deeper than the cutting does. This is a mistake, at any rate it does not apply to places where the treatment of this stock is understood. The seedling Briar, like all other seedlings, sends a shoot straight up into the air and a root straight down into the soil, and if we never transplanted it, but budded it, and allowed it to remain permanently in the seed bed, I am quite ready to admit that it would form a tap root, but I have no doubt that most amateurs have received cutting Briar Roses from the nurseries with long coarse tap roots to them. Well, what do they do with them? "Cut back short, of course," says everybody. This is exactly what should be done with the seedling Briar when it is transplanted for budding. If it is done the roots will grow out just as horizontally as the cuttings do. If Mr. Raillem will allow me, I shall be glad to send him, through the Editor, a plant on the seedling Briar, when he can judge for himself if I am right or not. While on the subject of the seedling Briar, I may say that, in my opinion, the greatest merit it has is that it is grown from seed, seedlings being, as a rule, much more vigorous than cuttings.

A word about Her Majesty. I give my experience for what it is worth, having grown 1500 plants of this variety last season. In my opinion this Rose is a decided acquisition; coarse, no doubt, when grown in fertile soil and heavily manured, but if treated properly—that is, grown in poor soil and not pruned too hard—I believe the blooms will be exquisite in form and colour. I am afraid its weak point is mildew. Like Mr. Raillem, I never noticed thrips until this season, but I had an attack of it then. Lady Mary Fitzwilliam, Captain Christy, Merveille de Lyon, and Her Majesty were in many cases completely spoiled. In dry seasons I fear thrips will always be a nuisance which knows no cure.

I quite agree with Mr. Raillem that the non-ripening of the autumn-grown wood through loss of leaves or other causes is immaterial; it is the lower buds on the spring-grown and summer-ripened branches that we should look to for next season's blooms.—D. GILMOUR, JUN.

ROSE MILDEW.

THE difficulty mentioned by Mr. W. Raillem on page 532, as to mildew appearing on forced Roses in a house which has never had a Rose in it before and during the wintry months, is easily explained. The simple spores would in all probability be taken into the house with the Roses. They are often present on Roses in large numbers when quite invisible to the unaided eye. The minute damp-proof and frost-proof boxes (perithecia) are only produced on the approach of cold and inclement weather. The fungus in this manner protects itself against impending destruction. In a greenhouse the fungus finds itself in a paradise of unchanging temperature, therefore as it has no need of winter perithecia it does not produce them, but goes on producing the simple spores in the summer fashion during the wintry months. To the fungus winter in the greenhouse represents capital summer weather, just suitable for mildew.—WORTHINGTON G. SMITH, *Dunstable*.

MILDEW AND THRIPS.

IN reply to Mr. W. R. Raillem, in his interesting "Notes on Past Rose Season" he will find the "perfect" mildew destroyer, which is a liquid preparation of sulphur, a great improvement on the old method of applying sulphur. It leaves no sediment on the leaves. The "swift and sure" insecticide makes a capital destroyer of thrips. It is largely composed of petroleum, which is made perfectly soluble in cold water without the aid of an alkali. It can be used on plants in full bloom with safety. These preparations of the Horticultural and Agricultural Chemical Co. of Glasgow have been frequently advertised in your columns, and can be had from seedsmen.—S. C. B.

ROSE STOCKS FOR ROSES.

WE hear a good deal from time to time about the relative merits of seedling Briars, cutting Briars, and Manetti stocks. I once procured a few Roses on all of them, and could not perceive any substantial advantages that one kind possessed over the other. Do all varieties of Roses succeed alike on these stocks? I have also raised several Roses from cuttings, and found all the strong growers so established thrive quite as well and produce equally good blooms as when the varieties were budded on any of those stocks; and, moreover, stocks of Gloire de Dijon, John Hopper, and some others when budded with different varieties appeared to answer as well as Briar stocks, seedling or budded, and the Manetti. There are always plenty of cuttings in gardens where Roses are grown, but it does not do to wait till the regular pruning time in March or April before inserting them, as not one in ten will strike then, but if made and inserted in October or early November few will fail if ripe wood be selected and a length of 6 inches is placed within the ground and 1 or 2 inches remaining above it. Rose cuttings will strike root if inserted now, at least some of them will, but the sooner they are put in after the leaves change in the autumn the better. Inserting buds in some of these own-root Roses was a freak of fancy, the employment of a few idle moments, without any calculation of ultimate results, which, however, proved satisfactory.—A PEDDLER.

ARTIFICIAL MANURE.—A NEW ROSE.

I DO not go in for Orchids. The only glass structures I have, in common with Mr. Chamberlain, are a few handlights, tumblers, and wineglasses, but will "Dum Spiro Spero" tell me whether the artificial manure he recommends will do for Roses in the open air? If so, as an experimental philosopher, I will try it if he will furth r tell where I can get it, and when best to apply. My ambition for more than thirty years has been to obtain Rose blooms of the diameter of a dessert plate, and I have hitherto failed! I have a promising seedling Rose, which I purpose naming "The Dean of Rochester." So please register the name for two years, Mr. Editor, until I have fairly tested it.—NIL DESPERANDUM.

EXHIBITING AND JUDGING BOUQUETS.

THE various letters upon this subject have contained numerous points of interest and more or less importance, but there is one matter that seems to have escaped the attention of your correspondents, and to this I now wish to call attention. The principal object of classes for bouquets and other floral decorations at shows is presumably to improve the taste for such work generally, and especially amongst gardeners, who unfortunately seldom receive as much training as they need to meet the very numerous calls upon their skill in these times. That being so, I think classes should be devoted to gardeners as in other departments, some being open or for nurserymen. It places a gardener at a great disadvantage when he has to compete with persons in trade who buy large quantities of the choicest flowers, and can consequently always select the best for exhibition. Besides, the work is often entrusted to specialists whose whole time is occupied in the business, and consequently the advantages are greatly in favour of the trade exhibitor. While these are allowed to enter with gardeners and win all the leading prizes year after year there is not likely to be any great advance in the number of competitors, as in several cases it has practically amounted to a monopoly of the first prizes. No one can reasonably object to the florists taking advantage of this state of affairs, it is part of their business, and they are perfectly justified in endeavouring to win as many prizes as possible; in fact, numerous shows would present a very unsatisfactory display in this department if it were not for their exhibits. It is, however, worth the attention of horticultural societies in all cases where their funds will admit, and if they can expect a fair number of competitors, the classes should be divided as suggested.

The minor matters can be safely left to the judges where professional men are employed, and the chief causes for complaint have arisen when the task has been assigned to amateurs, either ladies or gentlemen. I

have had some experience in the work of the florist both in private gardens and in business, and have also been called upon to judge occasionally, and consequently know somewhat of the diversity of opinions in matters of taste. I have also found there are some persons in this, as in other matters, greatly deficient in the faculty of judgment, being as erratic in their opinions and inconsistent in their decisions as possible; but a man who has had practical experience in the work is the one least likely to err, as he has somewhat of a standard by which to gauge the merits of those he sees. Few people in a general way can assign any reason why they prefer this or that bouquet, buttonhole or decoration, and it is because they have no clear ideas which is more desirable—contrast or harmony, boldness or lightness, numerous colours or a few tints. Each style in competent hands has its own special attractions, and the difficulty arises when excellent representatives of each are competing together, as the minor details of composition have then to be carefully weighed.—GARDENER.

WHEN I first brought this subject forward I did so thinking that if the practice of making and exhibiting bouquets in the loose manner in which I had seen them was at all general at horticultural shows the discussion of the subject in this Journal would tend greatly to put a stop to it, and give rise to some rules being observed at shows which would place all intended exhibitors on an equality. I was glad to see the subject so ably taken up by other correspondents, but sorry to see reference made to individual exhibits. Such references will not serve any good purpose in this discussion, which we yet hope will be brought to a satisfactory conclusion. As regards the size of a bouquet, I think that from 10 to 18 inches would be a size suitable to most exhibitors, then they could use such flowers as they choose in its construction. Good taste in the arrangement of the flowers ought to have more weight with judges than the rarity of the flowers. Rules set down by committees should not be infringed by either exhibitors or judges, and then the balance of good feeling will be maintained by all concerned. The first bad example should be rejected at once; the trouble of doing so would be much less than trying to rectify errors afterwards, for if one bad example is allowed to pass more will follow. If a standard set of rules does not meet with the approval of all committees of flower shows then I think the least they can do is to frame a few simple rules themselves, and see that they are thoroughly adhered to.—G. GARNER, *Amberwood Gardens, Hants.*

"AMATEUR FLORIST" seems to think me inconsistent in my remarks, but I fail to see why. I did not excuse myself, or I should not have confessed the practice of inserting Ferns at the shows; neither did I commence it till I found no notice was taken of it by judges or committees. No one, however, would be more pleased than myself to see it stopped, and the only way in my opinion is to have judges who are thoroughly acquainted with the work, and let them carry out strictly the rules in the schedule. I am sorry "Amateur Florist" thinks me severe on Mr. Chard. I did not intend it to mean exactly as it reads, and if I say I wrote an amendment to appear in this week's paper, but thought it better to wait, he will acquit me of any hostile intentions. It should have read thus:—Had I been the judge I would have withheld the first prize, as neither of the exhibits was worth the handsome prize offered, and this without casting any reflection on Mr. Chard's work, as I distinctly stated Mr. Chard had other exhibits to see to, consequently he had not time to finish this particular exhibit in his usual manner, in other words he was careless. I think I can claim as great acquaintance with Mr. Chard as "Amateur Florist," and I shall yield to no one in my respect for him; and more than this, he, as well as others, including myself, made sure of his being placed first, and one of my objects in explaining it so minutely was to call into question the peculiar judging.

As to the list of prizes which both Messrs. Perkins and Chard can show, may I be allowed to ask at what expense have they been gained? One reason why I cannot show such lists is—first, I have not time to attend all the shows, and another is both have better facilities for obtaining costly flowers than I have, as witness two remarks, one is Mr. Chard's own, where he says he took no showy Cattleyas in his bouquets; and another is one I heard in front of almost, if not quite, the last bouquet Mr. Perkins showed this season, and it was this: "The flowers in that bouquet are worth double the prize money." This brings us back to costly bouquets, and suggests a class for bouquets, Orchids excluded, that would put most exhibitors on a more equal footing, and give those a chance who do not grow Orchids. I do not mean to shut out Orchid bouquets from the shows, as we know they are too valuable to be ignored, but the remark often heard at shows is, "Who can stand any chance against such a bouquet as that?" But if the committee cannot afford two classes by all means leave it open, as good bouquets and table decorations at a show are a great attraction to nearly all visitors, and greater still to your humble servant A LEARNER.

NEW PLANTS OF 1887.

THE continual demand for novelties and the efforts of nurserymen and seedsmen to meet this by a proportionate supply afford some of the best indications that the interest in horticulture is far from decreasing. Year by year the records of novelties in the plant world assume considerable proportions, and the lists of certificated plants show in a remarkable manner how large a number of these are really meritorious additions to those already in cultivation. These, too, include not only hardy plants and florists' flowers that are within the reach of all classes, but also choice stove plants and Orchids of great value. There are thus some to suit the tastes and pockets of all, and this again is a sign that the love of horticulture extends almost equally throughout the various ranks of society. The dweller in towns who takes so much pleasure in his Carnations and Picotees, Auriculas or Chrysanthemums, is just as eager for novelties amongst his especial favourites as the clergyman, the wealthy merchant, or the nobleman with their Roses, Ferns, or Orchids, and great specimen plants which win so many honours at exhibitions. All are constantly watching for new additions to their collections, and the various trade firms, it must be admitted, do their utmost to satisfy them in this respect.

During the past half century enormous numbers of plants have been introduced, from tropical regions generally, and from the southern hemisphere. Distinguished patrons of horticulture perhaps first set the example of despatching collectors to various districts that had been but little explored. The London Horticultural Society took the matter in hand, and through their collectors, Douglas, Fortune, and others, added greatly to the number and variety of garden occupants. Realising the commercial importance of thus introducing plants, the work was speedily greatly extended by nurserymen, who with much enterprise engaged collectors to search the most promising countries for plant treasures. So rapidly did this system extend that one firm is said to have had as many as twelve collectors in their employ at one time. The result of this was that new imported plants became very numerous every season, and commanded in most cases large prices, especially with those that were slow of increase. Most of the leading types of plants have been much extended, and to some extent temporarily exhausted. It was found that the "finds" of sterling value became less frequent, and the expenses continued as great, so that gradually there has been a falling off in the number of special trade collectors, and many firms now rely mainly upon foreign friends or correspondents for the additions to their stock from abroad.

It cannot be supposed that all the plants worthy of cultivation have been discovered or introduced, for in Central America, Africa, New Guinea, and elsewhere there must be abundant scope for botanical research. This is proved to some extent by the numbers of Orchids that are annually sent to this country, and it would seem that collectors of these plants must neglect all others, or they might obtain many novelties when exploring such regions. Occasionally a visitor to a new district brings some striking species or unfamiliar type, as in the case of those imported from Socotra a few years since which awakened much interest, and one of these, Begonia socotrana, has been constituted the progenitor of an important group of Begonias. During the present year an expedition to the Island of Fernando Noronha was undertaken under the auspices of the Royal Society, and as the island had never been fully explored by naturalists it was thought the results would be very satisfactory. Fernando Noronha is a few degrees south of the equator, and about 200 miles from the Brazilian coast, a situation that might be expected to yield a vegetation of exceptional interest. From a botanical and zoological point of view the expedition was successful, but it was found that the majority of the types were either identical with those of Brazil, or very nearly so, and it is doubtful if gardens will be enriched by many novelties from that source.

The difference between the numbers of imported and home-raised novelties is this year very apparent in the lists of certificated plants, and the advance of the latter shows that hybridisers and others have been exceptionally busy. The Floral Committee of the Royal Horticultural Society constitutes the principal certificate-awarding body in the kingdom, and to it are submitted the majority of the new plants, either introduced or home-raised. The Judges at the Royal Botanic Society's Shows perform a similar function, but as there are only four shows in the spring and summer months, their duties are necessarily much more restricted. The Floral Committee of the National Chrysanthemum Society deals with the Chrysanthemums, and then elsewhere the judges at provincial shows also award certificates. It would be much more advantageous, however, if judges at shows generally would only give commendations, and leave the certificating to the central bodies of experts.

During the past year the R.H.S. Floral Committee has awarded 194 certificates, and 139 of these were for hybrids or varieties of popular plants raised in gardens or nurseries, leaving only fifty-seven as introductions, of which thirty-nine are Orchids. The Royal Botanic Society has awarded eighty-two certificates, of which sixty-two were garden varieties and hybrids, the remaining twenty being introductions, comprising thirteen Orchids. About ten plants received certificates from both Societies, so that the total number of distinct plants certificated would be 266. At Regent's Park the average number of certificates per meeting is twenty, there being four shows in the season, while at South Kensington with twenty meetings the average is not quite ten each. This would seem to indicate that such awards are granted more freely at the former than the latter, and at South Kensington that nearly 800 new, or presumably new, plants were submitted during the season. The National Chrysanthemum Society's certificates will be referred to separately, so that they need not be included here.

ORCHIDS.

Amongst imported plants Orchids still maintain their precedence, and the fact that the number of certificated Orchids is one-fifth of the total is a pretty good indication of their popularity. For several years

they have exceeded all other classes of plants in the number of novelties, and the difference is very marked this year. The large stocks of plants in the nurseries and the crowded sale rooms prove how extensive is the demand. Taking those that have been certificated during 1887 in alphabetical order the first to demand notice is Aerides expansum Leoniæ, a variety which has been known for several years, but was first exhibited at South Kensington on June 28th by F. G. Tautz, Esq., to whom the certificate was awarded. The typical Aerides expansum is not a very familiar plant in Orchid collections, but it is one of the most handsome of the genus. It is related to A. faleatum, and has by some writers been classed under that species as a variety, but it is sufficiently distinct to merit specific rank. The variety Leoniæ surpasses the ordinary A, expansum in the size and colouring of the flowers, and I learn from Mr. B. S. Williams that it first flowered with H. J. Ross, Esq., Castagnola. Lastra à Signa, Italy. The flowers are large with spreading white sepals and petals, the lip of good size, with a bold central lobe and two diver-



Fig. 2.—A GROUP OF NEW CALANTHES.

gent lateral lobes, bright rose in the centre, the other portion white spotted with purple. The flowers are not quite so closely set in the spike as in the ordinary forms, and though the foliage and habit are strong they are not so dense. With the exception of Acrides odoratum this genus is a somewhat neglected one, though it contains many handsome forms.

Next on the list is Barkeria Vanncriana, which was shown at South Kensington by W. Vanner, Esq., Camden Wood, Chislehurst, on January 11th last year. The Barkerias, though beautiful, are avoided by many cultivators, because they do not always succeed as might be desired. The plant shown by Mr. Vanner was, however, a very healthy one, and had a long scape with a few bright rosy purple flowers near the apex, the sepals lanceolate, the petals more ovate, the lip oval, acuminate, white in the centre.

Two Calanthes were certificated last year—viz., C. Halli, from Mr. W. Hall, Upper Tulse Hill (November 8th), and C. sanguinaria, from Sir Trevor Lawrence, Bart., M.P., Burford Lodge, Dorking (December 13th). C. Halli was the result of a cross between C. Veitchi and C. vestita luteo-oculata, and is a valuable aequisition, the flowers of great size and substance, 2½ inches in diameter and pure white. The plant exhibited had two spikes 12 inches long and four pseudo-bulbs, having been raised from seed six years ago. The compact growth of the plant and substance of the flowers renders this Calanthe remarkable, and the white flowers afford a striking contrast with the richly coloured C. Veitchi forms.

Calanthe sanguinaria was one of a group of choice varieties and hybrids that merit especial note. Many of these were seedlings of which the exact parentage is unknown, though it is not at all difficult to trace the characters of C. Veitchi and C. vestita in the majority, the influence of one or the other usually preponderating. C. sanguinaria is an extraordinary production, and most valuable for the intensely dark red or maroon colour of its large handsome flowers, which in contrast with the light tinted Calanthes appear almost black. This seems to have much of the C. vestita habit and floral form with a strange deepening of colour. The other forms included in the group were C. Veitchi splendens, flowers of great size, deep colour, and white centre, 2½ inches across from apex of upper sepal to the tip of the lip, the latter being 1¼ inch in diameter; C. Sedeni, very deep in colour and compact in the spike; C. amabilis, large flowers, pale blush, white centre; C. burfordiensis, very deep rosy crimson, with reflexing sepals and petals; C. rubro-oculata, white, with an intensely rich crimson in the centre; C. Veitchi lactea, creamy white; C. nivea, flower large, creamy white, with a yellow centre; C. luteo-oculata, pure white, with orange centre; C. porphyrea, a pretty, neat, bright rose flower, 1¼ inch across, the lip rounded; C. rosea, flower very large, blush; C. dubia, nearly white, and the pretty graceful Limatodes rosea which, as all remember, was one of the parents of Calanthe Veitchi. It may also be added that C. porphyrea is a hybrid from Limatodes labrosa and C. vestita rubro-oculata, nearly the same parentage as Messrs. Veitch's C. lentiginosa.

The illustration (fig. 2) represents five of the Calanthes and their hybrids as shown on the occasion already mentioned. The top left-hand figure is C. porphyrea, the bottom left-hand figure is C. rosea, the top right-hand flowers are Limatodes rosea, the next on the same side is C. Veitchi lactea, and the lowest one the dark C. sanguinaria. The plants were remarkably well grown by Mr. Bickerstaffe, and the value of Calanthes when properly treated cannot be over-estimated for winter groups.—LEWIS CASTLE.

(To be continued.)

HEATING EARLY VINE BORDERS.

THE first week of January is a period at which many Vines are started into growth, and to force them successfully it is important that the heat in the interior of the vinery be constant and sufficient to prevent a check from a cold exterior, as this may occur at any time until the end of March is reached. But apart from preventing a check of this sort, there are various appliances which may be used in forcing that will materially assist the Vines in their free and robust development, and amongst these none is more important than the application of bottom heat to the border and roots. It operates like magic on them and is highly beneficial. In some cases a great outlay has been incurred to heat the early Vine borders with hot water pipes, but this plan is far from common, and the absence of it need not be regretted, as a good hotbed answers the same purpose equally well. Where the roots are inside, a hotbed is not so much wanted, although even in this case it is advantageous; but where the roots are in the open a hotbed is absolutely necessary to their success, as it causes the Vines to come sooner into leaf, producing stronger growths and finer bunches, and places the roots more in harmony with the branches than is the case where the border is quite cold and the interior very warm.

A hotbed on a Vine border is made up in the ordinary way, and although it need not be very large, it ought to be made up to retain the heat until the cold weather is past. There is no difficulty in making them up to retain the heat for three months, and the proper time to put them on is at the time the vinery is first closed, and the beneficial effects of it will then be felt at the time it is most wanted, which is just as the leaves and bunches are developing. Last spring we omitted to put a hotbed on our early vinery border, and the deficiency was so visible on the Vines all the year through that the hotbed system will now become an annual practice.—A KITCHEN GARDENER.

THE SETTING, STONING AND SWELLING OF GRAPES.

WHEN I sent you a few lines on the above subject I was under the impression that many intelligent gardeners and others would take the same scientific interest I take myself in any abnormal results from good Vine culture. I thought, indeed, that the interest, if not the instruction, which accompanies this very important, and to me very entertaining study or pursuit, would be heightened by the assumption of at any rate average skill and good management in the examples and particulars which have been given from West Lynn, otherwise I at least should not have troubled you. It seems to me that Mr. Taylor is of a rather different opinion, but if so the reflection is very harmless, except in any possible rebound it may have upon himself. However, on this matter, as on all others outside the subject of Vine "feeding," and what may directly concern it, I shall leave the actual cultivator to speak for himself. Upon this I am challenged, and am happy to reply; for though I naturally make no profession of efficiency in practical gardening, I am quite prepared to stand by and support any of my previous statements of practical detail, gardening or other.

I have said then that the West Lynn Vines are kept well and duly supplied with all the manurial food they require, and being pretty intimately acquainted and connected with agricultural experiments, I certainly should not, as Mr. Taylor seems to think, speak of the sufficiency of any manures from which nitrogen was absent. This is but an initial letter in the alphabet of the subject of manuring. Mr. Taylor, on the contrary, believes the Vines to be starving, and is kind enough to give several leading indications by which it may be made known if such is the case or not. In this connection I will leave Mr. Stephen Castle to answer for himself, only asking Mr. Taylor to inquire of any competent person who saw the Gros Colman Grapes from West Lynn which took a prize at the Westminster Aquarium in the autumn, if he can point to 20 or 25 lbs. of better Grapes cut from a Vine of one rod of this variety, Grapes of more perfect finish, of better berry, of deeper colour, or greater density of bloom. Anyhow, is such a crop likely to be cut from a starved Vine? Again, did Mr. Taylor ever see a starved Gros Colman Vine produce upon three rods forty bunches of, in all respects, good and well finished Grapes, and of the estimated average weight of 2 lbs. per bunch? The same Vine perfecting besides the crop a very vigorous fourth rod of 5-8ths inch diameter, which, though stopped at the apex of the roof might have been carried to the ground on the other side, and ripened all the way. Now, it is only necessary to say that all the Vines at West Lynn have received precisely similar treatment throughout in regard to applications of lime or other manurial food.

When Mr. Taylor says that an application to the surface of a Vine border of 14 lbs. of lime—presumably caustic lime, though he does not say so, or it would be entirely harmless—is enough to destroy everything in the shape of nitrogenous food which that border has previously contained, he must excuse me if I say he is in error. I will say at once, however, that caustic lime has never been applied at West Lynn by my advice or desire except in small quantities for the purpose only of improving the mechanical condition of the soil. As a manure where lime is wanted I have uniformly advised the use of gypsum or sulphate of lime as being more soluble, and therefore more quickly available and better as a food than common lime, and perfectly safe to use in any safe quantity. It was only recently that Mr. S. Castle, by the advice of a great authority, who recommended the caustic lime in preference, without appending the caution he now thinks needed of moderation, used, or wished to use, it in preference to the gypsum. Strange to say also the cue of quantity was taken from Mr. Taylor's own receipt in "Vines at Longleat," and as he there says the effect of the application was extremely successful and immediate, surely it can scarcely have destroyed everything in the shape of nitrogenous matters in his border.

I concede at once, however, that Mr. Taylor has got hold of one element of truth in his statements upon caustic lime, and of it he shall have the benefit without further delay. It is no doubt bad gardening to apply common lime with any ammoniacal manures, and one I should never sanction, though I do not think the practical effects would in any case be nearly so serious as Mr. Taylor seems to imagine, and certainly not so as lime has been used at West Lynn. Still, as I have said, and as Mr. S. Castle knows very well, I prefer, on this very account, not using caustic lime at all as a manure. If common lime is mixed with sulphate of ammonia of course the sulphuric acid which previously fixed the ammonia therein is immediately liberated, as the nose readily detects. The sulphuric acid will leave the ammonia for the lime. A similar result takes place when other ammoniacal matter is placed in actual contact with lime, but such a connection only occurs to a very modified extent in any ordinary practice, and so far from a large dressing of lime robbing a Vine border of all previously applied manure, it could at most only affect the surface where it was pointed in. Besides, I am in a position to prove to Mr. Taylor, if he requires it, by certain experiments within my knowledge, that such a dressing of lime is rendered perfectly innocuous as a destroyer of nitrogenous materials within three months of application. By that time it will have attracted sufficient carbonic acid from the air if it could find acidity nowhere else to neutralise its caustic properties. Such neutralisation would take place still quicker if exposed to the air before application, hence the practice of so doing in great lime-using districts. The lime then becomes carbonate of lime, or chalk, and Mr. Taylor will not contend that chalky soils are by any means necessarily infertile.

There is also within my knowledge a garden of adhesive soil upon which

30 tons per acre of lime (14 lbs. a square yard) worked immediate and startling results. It at once became, and has since remained, of great repute amongst neighbouring gardens of like character for extreme fertility, mainly because of its improved mechanical condition. Will Mr. Taylor point to a case of land rendered sterile by lime—as without nitrogen it must be—whilst having a normal and reasonable quantity of manure judiciously applied as well? Truly lime is sometimes in bad repute as a soil exhauster, but usually because it has been applied to land choked with sour and inert vegetable matter, which, when rendered sweet and suitable for plant food by the lime, has nourished abundant crops. An inference has therefore been ignorantly drawn that equal results would follow all succeeding applications of lime, and that nothing else was wanted. But obviously, when all the previously stored food had been liberated and utilised fresh supplies would be required, and the lime may not have acted in such case as a food at all. I maintain therefore that the 14 lbs. of lime applied by Mr. S. Castle to the Vine borders in February had ceased to be able to exert much, if any, injurious effect to the food which was given the Vines in May and June—the first time of feeding—and that the much smaller quantity of lime then applied, though wrong in principle, was not sufficient to neutralise to any serious extent the large amount of liquid and other manures. No better proof that this was so could be given than was at once evident in the hearty and decided response of the Vines to the dressing, to their general vigour throughout the season, and the way they finished their wood and crop. Moreover, a Vine or two under experiment—perhaps it might be difficult to suggest many untried experiments of this nature at West Lynn—with sulphate of ammonia, showed that the roots had absorbed too much nitrogen, which would hardly have occurred in the use of a material so very easily robbed of its ammonia, if there had been enough lime to dissipate it quickly into the atmosphere. It is true that potash salts were applied in excessive doses some years ago to a few Vines for experiment only. It will surprise Mr. Taylor to know, however, that those so treated exhibit to this day the marked advantage they have always shown over those having the lighter dressing. Having read the experiments of M. Ville with potash on Vines I am not so much surprised as Mr. Taylor. If there has been any suffering for want of moderation in treatment at West Lynn I should say that it has been shown in too heavy cropping. We all have our weaknesses; and I should say that the chief weakness of Mr. S. Castle, as perhaps also my own, is too much pleasure in seeing a successful, which means a full as well as properly finished crop, with its attendant risks. It is only, however, in individual instances that any injury has been done in this respect. My conclusion, therefore, is that upon the main question at issue the cause of certain unusual local difficulties in the fertilisation of Grapes—which I had supposed to be of wider interest—Mr. Taylor cannot at present be said to have furnished any very helpful or tenable theories.—PROPRIETOR.

To Mr. W. Taylor the thanks of the gardening fraternity are due for exposing my errors. My first thought is what a vast amount of ignorance, or at least want of thought, there must be to let the question go a begging so long. The answer, however, when it did come if in a little space comes with great force, especially from so high an authority. That W. Taylor should be the one to detect my weak points I am neither surprised nor east down. Having no pet theory, if by noting particulars of practice and its results in reference to the Vines under my charge I am constrained to appear in the pages of the Journal, I must expect criticism. Without doubt criticism is good even though at times severe, and so with the Editor's consent I shall be always open to supply a line, not necessarily to record my successes, but if needs be the reverse, for the general good. The present question is this—Why, with such immoderate treatment of them, I should to-day have a bunch of Grapes worth so calling to look at? Yet with no desire at all to speak boastfully, I am not afraid to meet some of the great authorities with several bunches now or in the spring. Climatal conditions vary much I believe. We have a good salt breeze, especially at high tides with wind from the north. All the more reason for being careful in front ventilation at any time, but more particularly after the Grapes are ripe. Those who are in favour of front ventilation after Grapes are ripe are welcome to their opinion. I emphatically say the soundness of my berries is due mainly to the fact of very little air being admitted after the Grapes were coloured. This is not an entirely new idea, but represents my practice. Having, as I thought, dealt very fully with my details in Vine culture, more especially with a view to obtain perfect berries, I thought Mr. Taylor would scarcely desire more information. I wish he had to prune my Vines, his hands and shoulders would let him know the wood is ripe. I send a few cuttings in order that you can judge for yourself. I take it this is the best year I ever had for ripening wood. I fancy there is an abundance of pollen, and if the rods were gently tapped, as is done by most growers, there would be sufficient to dust the immediate leaves thickly. Pollen is, I am well aware, a necessity, yet how is it that at times a few small bunches on weak laterals show such an abundance of pollen, yet these do not produce the best berries? My son seriously proposed sending a parcel of fat worms from my Vine borders for inspection, this too at the worst time of year; but I daresay the Editor does not want any, he can have them if he wishes. This is my answer as to the quality of my "starved" borders. Once in Sussex it was my lot to have a very tenacious clay to deal with, here I have a stiff, plastic marl that will cut up like pieces of liver. To keep such a material open requires more than ordinary measures.

What I am still hoping to see solved is why stoning should be so generally defective. Lime was to be the panacea for all my faults in this respect, and I was told we could not use too much. That I have benefited the borders mechanically I am well aware, and the Vines are healthy. Any further writing will, I hope, be less beside the mark. I shall leave caustic lime alone, and use gypsum in future for stoning. Had I only one house I could not be so sure, but have no doubt now the fault of defective fertilisation was in the temperature or atmosphere. Seven houses should present a variety, not a conformity of results. It is a very general complaint, no matter how large the berry, that stones are needed. How many think to examine for this question of stoning? Until I get a majority of four-seeded berries I shall not be content. It may interest the Editor to know I have one small bunch of Buckland Sweetwater in the Grape room now, cut last week, plump, and yet having very few berries with more than two stones. If Mr. Taylor's very inquiring letter is the cause of others entering the field I shall be glad, even though the evidence may be against me. Setting, stoning, and swelling of Grapes cannot but be very important subjects. Ventilate the whole matter thoroughly. Surely some good may come of it. I cannot help wondering if the great authorities always succeed in producing the normal quantity of stones.—STEPHEN CASTLE, *Manager, West Lynn.*

[The wood sent is good; perhaps Mr. Taylor will send a sample for comparison. The worms will be better where they are than at this office.]



CHALLENGE TROPHIES.

THE letter of Mr. Wm. Bardney, in your issue of the 15th instant, is not to my mind conclusive as against challenge trophies. If money prizes are sufficiently large, why object to challenge trophies? If Mr. Bardney's contention was carried out to its logical conclusion, the prizes in the premier classes in an exhibition would be unfairly large in comparison with the remaining classes. Instances are not wanting where societies have been eventually injured by too much attention being paid to sensational prizes, to the exclusion of sufficient encouragement being given to the local and general classes. It is questionable if the popularity which these great prizes would give to an exhibition would not be counteracted by the damping effect which their strain upon the resources of a society would have upon the general classes. Each exhibitor in the latter has his circle of friends, who take greater interest in his success than perhaps they do in the premier classes, and a more healthy rivalry is created by sufficiently encouraging all classes of exhibitors than by giving undue prominence to the larger classes. One of the most encouraging signs of the permanence of the interest in Chrysanthemum growing which has sprung up in recent years, is the hold it has taken upon the masses. By all means let the principal prizes be sufficiently large to induce eminent growers to exhibit, and thus put a high standard before the rising cultivator, but if a prize of £10 or £15 and a challenge cup, with a chance of winning valuable prizes in the other classes, is not sufficient, it is questionable if a large prize, such as would be the case if the cup were to be finally won at the first competition, would have that effect. The letter of the Secretary of the Hull Society seems to have the true ring in it, and at the risk of being opposed to the opinion of such a competent authority as Mr. Bardney, I must give my opinion in favour of challenge vases.—BEVERLEY.

AMY FURZE—A NEW CLASS WANTED.

IF "T. W." cannot perceive any material difference between his suggested plan of relegating hybrid and flat-petalled Japanese to classes of admittedly reflexed blooms of Chinese origin, and the counter proposal to form a special class for the two former, his perplexity is not to be wondered at in respect to decisions arrived at under the present rules and schedules.

Your correspondent does not appear to understand how a bloom of Amy Furze may, when young, be considered as a reflexed, while when developed it is regarded with less favour as such. When this variety was first exhibited and certificated at Kingston it was regarded by all who saw it as having a closer resemblance to that type than to any other, hence was described as a reflexed variety in the reports and in catalogues. The true character of the variety was not then developed. Last November Amy Furze was certificated in two collections of plants at the Crystal Palace, and though the blooms on the plants were small and had not displayed their full character the variety was not certificated as a reflexed, but because of its distinctness and attractiveness. Some developed examples in stands of reflexed blooms weakened those stands without a doubt, and must have done so in the estimation of every competent judge in the kingdom, simply because whatever of the reflexed character they may have displayed when young had departed from them, and they then showed unmistakeably their Japanese origin and properties. When blooms are staged as reflexed, as such they must be judged, and to act on any other basis must, obviously, be to act erroneously.

I have worked with upwards of a dozen of the best judges in the kingdom this year, and not in one instance has there been any evidence of

obstacles arising from "peculiarities" or "leanings," but, on the contrary, complete unanimity in acting on recognised principles. Individual fancies appear to be in another direction.

As I understand the whole subject of classification is to be considered by the Committee of the National Chrysanthemum Society, the varieties admissible in a possible new class will no doubt be officially indicated; were I to enumerate them the individual peculiarity theory would perhaps be trotted out again, for though it only amounts to a phantom, yet phantoms have sometimes a disturbing influence.

Besides, it is not the duty of judges to make laws, but to understand those that are provided for their guidance, and to obey them; and when the law is not clear it is the rule to give the benefit of any doubt that arises to an exhibitor, instead of disqualifying his exhibit, and to judge the blooms on their merits, according to the standard of the type they are staged to represent. Dr. Sharp and Cloth of Gold, which "T. W." mentions, are reflexed Chinese Chrysanthemums, with no Japanese blood in them. The best blooms score the highest, those that are very small and much quilled on the one hand, and overblown and dingy on the other, being estimated accordingly.—A JUDGE.

PRINCESS BLANCHE.

LATE Chrysanthemums can be classed in two sections; any notes of certain varieties being seen or exhibited in bloom at this season of the year cannot be taken as a guarantee that such varieties are naturally late bloomers, for many of the earliest ones, like varieties of early Peas, can be made to produce the best late crops for succession. There are those that should naturally bloom in November, but from some cause—such as damage to the first buds by winds, frosts, or insects, or being intentionally disbudded, a secondary growth is caused which is growing on when the earlier buds would have been in flower, and which consequently retards the blooming beyond the natural season. Late propagation or weak cultivation will have the same effect in prolonging the flowering season. There are others that may now be properly termed midseason varieties, but which in the ordinary way are called late blooming varieties—viz., Princess Teck, and what may now be termed the Teck section, Hero of Stoke Newington, Mrs. Norman Davis, Lord Eversley, and Chas. Gibson, also Ethel, and Mr. J. H. Jones, Lady Carey, Lady Slade, Angelina, Pelican, and also Ceres, the latter being the latest, but neither of these is so late as one or two others that have been recently introduced. We have now one or two naturally midwinter varieties, one of which, Princess Blanche, is the object of this note. To anyone requiring white flowers at Christmas or in the new year—and there are few who do not—this variety is especially valuable, and cannot be too widely cultivated to fill up the gap generally felt between the two seasons. For using in combination with Poinsettias, Euphorbia jacquiniæflora, and other gay midwinter flowers for table or room decoration, they would be very effective. It is a variety of 1886 of the Japanese section; it has a very dwarf robust habit, with bright glossy foliage; the flowers are pure ivory white, measuring from 4 to 6 inches in diameter, florets glossy and of great substance, outer ones broad, pointed at tips and somewhat recurving; the centre ones are narrower which slightly twist and curl with age, giving them a true Japanese character.

In reference to Mr. W. J. Murphy's inquiry, page 568, I consider Lady Matheson cannot be classed in any other section but Japanese, although it no doubt has much incurved blood in it. It is a midseason variety with flowers of a creamy white shading to primrose in the centre, florets semi-tubulated, slightly incurving at the tips. The other variety mentioned I am not acquainted with.—C. ORCHARD.

RIVAL CHRYSANTHEMUM SHOWS.

I OBSERVE that my friend Mr. Woodcock is unwilling to admit that the Chrysanthemum Exhibition annually held by the Sheffield and Hallamshire Gardeners' Mutual Improvement Society is a representative one in any sense, and when I stated that "there ought only to be one representative exhibition," he agrees to it as an abstract proposition only. The fact that such shows have been held annually for ten consecutive years, and for seven years without a rival, and that they have been considered by the public at large as the Sheffield Chrysanthemum Shows, gives them "the right of priority" and the right—up to the time of the establishment of the Sheffield and West Riding Chrysanthemum Society three years ago—of being considered as representative of Sheffield as a town; and the fact that there are some gardeners (myself included), amateurs, and others who do not see their way to subscribe to the rules of that Society and so avail themselves of its privileges, does not deprive them of those rights; neither does the possibility of there being numerous better Chrysanthemum plants and flowers in the neighbourhood than are to be seen at those shows; but I should like to know where there is a flower show of any kind that contains within itself all the best examples of garden produce within the district? and supposing there ever was such a phenomenon, where is the non-exhibitor at such to be found that would admit it? Would he not declare that he "had better stuff than that at home?" But after all, what does it signify which is "The Original Pie Shop?" The public will flock most to that shop which provides the best pies and best accommodation, and as there is not sufficient custom in Sheffield to keep two such "Pie Shops," the proprietors of one of them will sooner or later have to "file a petition."

Inasmuch as the Sheffield and West Riding Chrysanthemum Society manage their exhibitions in a broader and more generous spirit, I think they are undoubtedly most worthy of the support of the public, and I believe they will continue to have that support; but I regret very much that stumblingblocks to the union of the two Societies should have been made out of such unsubstantial things as "representation" and "priority;" however, the sooner they are kicked out of the way the better. Mr. Woodcock and I are in unison as to the desirability of the amalgamation of the two Societies. He says nine-tenths of their members are desirous of such union, and I am informed that many members of the other Society are also willing for the two Societies to join; that being so, what obstacle prevents the union? Probably it is the question of the individuality of the two Societies. I would suggest—but I do it in fear and trembling, and my friends who know me best will fully appreciate my extreme nervousness—that the Sheffield and West Riding Chrysanthemum Society omit the words "West Riding" from their title, for Sheffield requires no "handle" or anything else to its name, and call it simply "The Sheffield Chrysanthemum Society;" and that the Sheffield and Hallamshire gardeners merge the Chrysanthemum Exhibition they have annually held in connection with their Mutual Improvement Society into this one distinctive Sheffield Chrysanthemum Show. This would be a graceful act on their part, and one that would redound to the credit and benefit of their Society. It would be a good thing for a deputation from each Society to meet and discuss the position of affairs in a friendly spirit and arrive at an amalgamation if possible.—J. UDALE, *Elford*.

CHRYSANTHEMUM AMY FURZE.

I AM very glad your correspondent "T. W." has called the attention of your readers to the anomalous position of Amy Furze. "A Judge," on page 546, says the more it displays its Japanese origin the more it weakens a reflexed stand. An experienced Judge on the same page says, though out of place in such stands, blooms are judged on their merits when in them; if so, where do they weaken a reflexed stand? Again, he says as they develope their character, they become spreading Japanese, and lose points as reflexed flowers. Who is to tell the turning point of a reflexed flower into a Japanese? I quite agree with "A Judge" that it should be confirmed as one thing or the other—not a reflexed flower one day and a Japanese the next; that seems to me to be a most questionable position. I think a flower should be classed as what it is when fully expanded. If you did that I think Amy Furze would be a Japanese. I do not know if either of the two Judges officiated at the Liverpool Show, where a stand of six reflexed blooms was passed over without a prize—a stand, in my opinion, and in the opinion of many others, that was the best in the Show. Amy Furze was supposed to be the fault in that stand. Was it judged on its merits in that case? Perhaps "Another Judge" can give us his opinion.—T. H.

MRS. C. CAREY SPORT.

I SEND you a sport from Mrs. C. Carey. It is now, I think, eight years ago since I sent that variety out. I have never heard of it varying in colour before.—H. CANNELL.

[This is a very remarkable "sport," much larger than the blooms of the (white) variety accompanying it, and, unlike them, has not twisting and incurving florets. The bloom is as large as an average Belle Paule, and not very dissimilar in colour from some dark forms of that variety.]

PROFESSIONAL GARDENERS' FRIENDLY BENEFIT SOCIETY.

THE members of the Professional Gardeners' Friendly Benefit Society held their annual dinner on Wednesday evening, the 28th of December, at the "Green Dragon Hotel," Guildford Street, Leeds. Mr. James Inman, the President of the Society, occupied the chair at the after-dinner proceedings, and Mr. William Grix (the Vice-President) the vice chair. Among the gentlemen present were Alderman Scarr (the Mayor), Mr. Joseph Bradley, Meanwood; Mr. Henry Hick, Manchester; Mr. Robert Leatherstone, Mr. John Sunley, Milford Junction; Mr. J. R. Beckwith, Mr. Joseph Smith, Mr. George Hemming, Mr. J. W. Frankland, Mr. William Green, Mr. J. F. Ryder, Mr. William Sunley, Secretary; and Mr. Thos. Jamieson, Treasurer. Letters of apology were received from Mr. Henry Oxley, and Mr. W. L. Jackson, M.P. The last-named gentleman expressed the hope that the Society, which had now arrived at manhood, would have a great future of usefulness. The Chairman, in the course of his remarks, attributed the success of the Society to the support accorded to it by its honorary members; also the praiseworthy endeavours of the Society's officers, one and all, in the furtherance of its interests—especially Mr. Sunley, the Society's indefatigable Secretary, who for the whole of the twenty-one years the Society had been in existence, had made the Society's interest his study, and as a mark of appreciation a testimonial was being raised for him. The Secretary (Mr. Wm. Sunley) read the report of the Committee, which stated that the progress of the Society during the twenty-one years of its existence was a subject of satisfaction and congratulation to the members. The income for the past year had been £130 17s. 1d., and the expenditure £92 19s. 11d., leaving a balance in hand of £37 17s. 2d. The total amount now placed to the credit of the Society was £865 9s., or an average of £7 8s. 9d. each financial member. There were now twenty honorary and 117 financial members—numbers which gave promise of the future prosperity and stability of the Society. In replying to the toast of the Mayor and Corporation, Alderman Scarr said that if he were not Mayor of Leeds he should tell them that he was a land reformer. He believed the time was fast approaching when the

gardener's craft would be better recognised than it was at present, as the first necessity for the sustenance of the country. (Applause.).

A most pleasant and enjoyable evening was spent, a number of the members contributing songs, &c.

PLANT NAMES.

[A paper read at a meeting of the "Chiswick Gardeners' Mutual Improvement Association," on December 21st, 1887. By F. W. Burbidge, F.L.S., M.R.I.A., Curator Trin' Coll. Botanical Gardens, Dublin; formerly of the R.H.S. Gardens, Chiswick; and also of the Royal Gardens, Kew.]

(*Continued from page 571 last vol.*)

On the walls of a room in the great temple of Karnac at Thebes are sculptured portraits of plants foreign to Egypt, and these have been by some archæologists supposed to be the oldest botanical illustrations in existence. It appears that Tuthmosis, Tuthmes, or Thothmes II. (of the XIII. dynasty), made an expedition, or campaign rather, into Arabia, and he brought back to Egypt many trees and plants of that country, and these he caused to be carved on stone after the custom of the time. Here, in fact, you have a royal plant hunter and botanist to boot something like Solomon. These sculptures not only represent the plant or tree, but the leaves and fruits or seed-pods are shown separately after the fashion in modern botanical illustrations. Paper casts of this work have been made by Mr. W. Flinders Petrie, the well-known archæologist, and these copies will no doubt soon appear in our national museums. Dr. Mahaffy, the professor of ancient history in the University of Dublin, tells me that the time of Tuthmes III. may with tolerable certainty be placed between 1500 and 1600 B.C., that is to say about or a little after the epoch of Moses, and so you will perceive that these stone portraits of plants are well-nigh coeval with those inscribed "tables of stone" which Moses set before the Israelites after leaving Egypt, and which had been handed down to us as the ten commandments. But practically speaking we must take it for granted that botanical studies and nomenclature began with the Greeks, as we shall presently see, and from them passed to the Romans, and because this was so, the botanists of Europe in following the literature of Greece and of Rome, naturally enough gave us names in what were the learned languages of the time. Now-a-days you will find Latin plant names even in the more recent botanical books of Japan, but alongside these is always given the popular or Japanese nomenclature. As to Greek, I have heard a prophecy that in less than half a century it will be no longer taught in colleges or in the higher schools. I hope this may be true, and that our youth may be led to learn the living languages of Europe instead, and with these get a sound technical and commercial education which will enable us to compete for a time with the well-taught men from other nations in Europe who flock to our shores.

The late Dr. John Hill Burton in the introduction to his work, "The Book Hunter," strips Greek nomenclature of some of its rags and leaves it pretty much in the condition of the "Greek Slave." What he says of it is this: "No doubt the ductile inflections and wonderful facilities for decomposition and reconstruction make Greek an excellent vehicle of scientific precision, and the use of a dead language saves your nomenclature from being confounded with your common talk. The use of a Greek derivative gives notice that you are scientific. If you speak of an acanthopterygian, it is plain that you are not discussing perch in reference to its roasting or boiling merits; and if you make an allusion to monomyarian malacology, it will not naturally be supposed to have reference to the cooking of oyster sauce.

"Like many other meritorious things, however, Greek nomenclature is much abused. The very reverence it is held in, the strong disinclination on the part of the public to question the accuracy of anything stated under the shadow of a Greek name, or to doubt the infallibility of the man who does it, makes this kind of nomenclature the frequent protector of fallacies and quackeries. It is an instrument for silencing inquiry, and handing over the judgment to implicit belief. Get the passive student once into palæozoology, and he takes your other names—your ichthyodorulite, trogontherium, lepidodendron, bothrodendron—for granted, contemplating them, indeed, with a kind of religious awe or devotional reverence. If it be a question whether a term is categorematic (a word that may be logically used by itself as a term), or is of a quite opposite description, and ought to be described as subcategorematic, one may take up a very absolute, positive position without finding many people prepared to assail it. . . . The great erect stone on the moor which has hitherto defied all learning to find the faintest trace of the age in which it was erected, its purpose, or the people who placed it there, seems as it were to be rescued from the heathen darkness in which it has dwelt, and to be admitted within the community of scientific truth by being christened a monolith (a single stone). If it be large and shapeless it may take rank as an amorphous megalith (a shapeless big stone), and it is on record that the owner of some muirland acres, finding them described in a learned work as 'richly megalithic' (richly big-stoned) became suddenly excited by hopes which were quickly extinguished when the import of the term was fully explained to him. Should there be any remains of sculpture on such a stone it becomes a lichoglyph (a carved stone) or a hieroglyph (sacred sculpture), and if the nature and end of this sculpture be quite incomprehensible to the adepts they term it a cryptoglyph (secret carving), and thus dignify by a title of honour the absoluteness of their ignorance. The vendors of quack medicines and cosmetics are aware of the power of Greek nomenclature. . . . But perhaps the confidence in the protective power of Greek designations reached its climax in an attempt made to save thieves from punishment by calling them 'kleptomaniacs' (insane thieves)."

Ruskin, in his "Queen of the Air," says; "I wish they (the philosophers) would use English instead of Greek words. When I want to know why a leaf is green they tell me it is coloured by 'chlorophyll,' which at first sounds very instructive; but if they would say plainly that a leaf is coloured green by a thing which is called 'green leaf,' we should see more precisely how far we had got. However, it is a curious fact that life is connected with cellular structure called protoplasm, or, in English, 'first stuck together,' whence conceivably through deuteroplasms or second stickings, and tritoplasms or third stickings, we reach the highest plastic phase in the human pottery, which differs from common china ware primarily by a measurable degree of heat, developed in breathing, which it borrows from the rest of the universe while it lives, and which it as certainly returns to the rest of the universe when it dies."

In a word, is it not time to be serious and to utter a "not loud but deep" protest against verbal mountebanks who seek to hide their ignorance and to beguile us by very often needlessly using Greek or Latin names? Botanists, however, may the more especially be excused if they have evinced a leaning towards Greek names, seeing that two of the early philosophers or physicians of Greece wrote on plants at a period when learning was at a low ebb in Europe generally. The first was Theophrastus of Eresius (B.C. 374—286), and the second was Dioscorides (A.D. 40), and to the writings of these two men much attention was at one time given by early European and British botanists, and tons of editions and translations of their books, with countless commentaries have been made.

When we come to the Roman or Latin authors we find Cato (B.C. 150), or six centuries after the foundation of Rome itself, writes of gardens, which he says, "should have a southern aspect and be well supplied with water," and he is very particular in his directions for the cultivation of Asparagus. He also mentions seven varieties of Olive, six good varieties of Grapes, four or five Apples, five of Pears, six of Figs, three of Nuts, and also alludes to Pomegranates, Services, Quinces, and Plums. But it is Pliny the Elder (A.D. 23-79) who is most explicit as to the fruit and other importations into the Roman gardens of his time. Even at this early date in the Christian era the Romans possessed nearly all the fruits grown by us to-day, if we except the Orange (introduced into Italy in the fourth century), and the Pine Apple. The Fig and Almond had been brought from Syria, the Citron from Media, the Pomegranate from Africa, Apples, Pears, and Plums from Armenia, the Apricot from Armenia or Epirus, the Peach from Persia, Cucumbers and Melons possibly from Armenia or Persia, while Cherries had been brought from Cerasus, in Pontus, about seventy years before Christ. Pliny mentions many more varieties of fruit than Cato, so we may rest assured that the industry of a century had made many improvements in Roman gardening. Cato and Pliny may be taken as examples of the many other writers on gardening among the Romans, and it is scarcely necessary to state that our earliest English works on gardening were at least framed on Latin models even if not often directly copied or translated from them. But with the advent of Englishmen like Turner (1538-1568), Gerard (1597), and Parkinson (1623-40), and the first of European plant collectors of any note, Carolus Clusius, whose great "Historia" was published in 1601, botany in England began to spread and take deeper rootage among all intelligent people, and the ground was ploughed ready for the good seed of Bacon (1561-1626) and of Evelyn (1620-1706) to take root and bring forth that harvest of a hundredfold which it is now our privilege to enjoy.

Of modern and living botanists and their works it was originally not my intention to speak, but it is scarcely possible in a paper professedly dealing with plant names to avoid allusion to the "Genera Plantarum" of Sir Joseph Hooker and the late Mr. George Bentham. So far as genera are concerned it is a colossal work, and it will be the standard authority for many years to come. It is not easy to comprehend the stupendous amount of labour such a work must have absorbed, and it could only have been produced by the most acute and experienced botanists situated in the best botanical environment in the world. There are two other works, and these are cheap enough for every gardener to possess, and possessing them he will be pretty well prepared to meet any question which may arise on botany or on garden plants. These books are "Treasury of Botany," second edition, by the late Dr. Lindley and Mr. Thomas Moore; and "Johnson's Gardeners' Dictionary," as revised by Mr. N. E. Brown of Kew. A very valuable, but more expensive "Dictionary of Gardening," in four volumes, is now in course of preparation by Mr. George Nicholson of Kew, and this has the advantage of many fine wood engravings. Loudon's "Encyclopædia of Plants," now and then to be had for about a sovereign, second hand, is also very valuable, although somewhat out of date; and those who are beginning the study of botany should see Sir J. D. Hooker's "Primer," published for a shilling by Macmillan and Co. Two valuable works besides the above are Cassell's "Popular Gardening" and "Epitome of Gardening," by Dr. Masters and the late Mr. Thomas Moore, which is the best of all cheap (5s.) manuals on modern gardening. As a book of reference on English cultivated fruits there is nothing approaching the latest edition of the "Fruit Manual" by Dr. Hogg. Barron's "Vine Book" (second edition) should be in the hands of all interested in Grape culture, and the English translation of Vilmorin's "Jardin Potagère," by Mr. Robinson, called "The Vegetable

Garden," is the most reliable work on vegetables, their nomenclature and culture. Books like these are as necessary almost as tools in all good gardens, and employers who added the above to their gardeners' libraries assuredly would get more than interest on the money expended.

To return to our text. The late Dr. John Lindley, who at one time was the autocratic Secretary of the Royal Horticultural Society, although a botanist pure and simple, yet felt the urgent necessity of a more popular nomenclature than that in use during his time. In his "Vegetable Kingdom"—the best historical work of its day—in the preface, page xvi., we read his opinions on this question as follows: "No one who has had experience in the progress of botany can doubt that it has been more impeded in this country by the repulsive appearance of the names which it employs that by any other cause whatever; and that, in fact, this circumstance has proved an invincible obstacle to its becoming the serious occupation of those who are unacquainted with [what are called] the learned languages, or who, being acquainted with them, are fastidious about euphony [right sounding] and Greek or Latin purity." Lindley tried to anglicise the terminations in cases like Myriospermum, which he reduced to Myrosperm, and Malanthium to Melanth, but he met with but slight success. But if such English names as he had proposed did not become universally adopted, he consoled himself by their rejection to the "masterly inactivity" of indifference, rather than to any intelligent and reasonable opposition. He was fully convinced of the importance of popular English names, and aptly points out that persons the most careless of the difficulties of articulation would prefer to speak of a "Fringe Myrtle, rather than of a Chamælaucium, and of a Grit-berry than of a Comarostaphylis. Mere translation of Latin or Greek names into English is, as Lindley points out, neither necessary nor expedient, and he forgets not to show that Latin or Greek names of a pleasing sound, such as Mimosa, Arbutus, Fuchsia, Primula, Orchis, Iris, Narcissus, &c., have already passed into popular currency, and that nothing would be gained by interfering with such names as these; but it will be a long time before such names as Gravenhorstia, Andrzejofskya, Calucechinus, Kraschenninkovia, and Pleuroschismatypus, or even Cryptophorantus roll sweetly and infallibly from the gardener's tongue! Having had considerable experience in public gardens, I know how rarely what is termed the scientific names of plants satisfy the intelligent popular mind. "What is this lovely plant?" says a lady visitor. "It is Cienkowskia Kirkii," you answer, or it may be Owtrowskia magnifica, or if a Palm Phœnicophorum Seychellarum, and in nine cases out of ten comes the reply "Ah! yes, but what is its English name?" This, then, is the real difficulty—viz., how to make plant names intelligible to those who know but "little Latin and less of Greek." Of course we shall be met with the old parrot cry against the use of English names. When the Funkias were christened "Plantain Lilies" it was objected that the plant being neither a Plantain nor a Lily the name was double erroneous, and quite inappropriate, but the name is a good distinctive one and "came to stay" as the Americans have it. One nurseryman acknowledged to me that he liked the popular name "Plantain Lily" because he never could get people to buy these plants under the name of Funkia, so repellent was the sound of the word to English feeling. Besides, if we say "Siebold's Plantain Lily," that is as definite as Funkia Sieboldi. "Bronze Leaf" is quite as definite and as euphonious as is Rodgersia podophylla. Very few people ever purchased Agathæa cælestis until Mr. Cannell, I believe it was, called it what really it is "Blue Marguerite." "Winter Gladiolus" is a better name than Schizostylis coccinea, and which of you would not sooner say "May Apple" rather than Podophyllum peltatum? Again, some while agreeing to the use of old and well fixed or assimilated English names as those of Chaucer, Turner, Parkinson, Gerard, or of Shakespeare, object to the coining of new names for new introductions or for old plants having no fixed popular name. But we who like English names do not at present object to any plants being named in Latin or Greek, and of course we might object as reasonably in the one case as our opponents in the other. The apparent fact is, we must be "liberal unionists," and agree to a well-regulated system of dual nomenclature, Latin-English, or English-Latin, as the case may be. English names have, in the main, sprung up spontaneously in the minds of the people just like legends and fairy tales, and are often associated with them. They are the very poetry of botany. Latin names don't look well in English poetry, they represent a sort of invasion some day to be absorbed or overcome and banished by the sturdy Saxon tongue.

Now I wish you to clearly understand that this is a question not of Latin *versus* English names, but of Latin and English names combined. What is desirable is a state of constant and well-regulated co-operation, and not one of competition or supercession. Latin or Greek names must of necessity be employed by the botanist who at the present time wishes his names accepted by the botanists of other countries beside our own. So that at the outset we fully grant to the botanists the right and freedom to use Latin or Greek whichever they like, merely asking that such names as they may coin shall be as short and as pretty and as euphonious as possible. But while granting this much for cosmopolitan usage, and for the sake of expediency and precision, some of us say and believe that pretty and suggestive English names should also be applied to all plants that are named or worth naming in Latin or Greek. Formerly the botanist did actually supply these secondary and necessary English names, as a glance at the earlier volumes of the "Botanical Magazine" will show, but in recent years, just when they were most required, this praiseworthy old fashion has been discontinued. The first English botanist to mention popular names as well as scientific ones was, as I believe, Turner in his "List of the Names of Herbs," published in 1549.

After all, is it not curious to find Latin names used so much in gardens, while common English names serve for the more important industry of farms! What farmer would use Latin for horse, or cow, or heifer, or sheep, or for his crops? No! simple English is good and precise enough for all the "kindly fruits of the earth" as for "the cattle on a thousand hills." We speak definitely enough of a donkey or of an ass, but if either of them should eat a Thistle is that Thistle for ever to be defined as Carduus arvensis? I believe there are name-mongers who would oblige the unoffending ass to swallow the name as well as the Thistle if they could. We are told to "call a spade a spade," and some of us would like to call this Carduus simply "Field Thistle." Certainly, as things are, we are obliged to use Greek or Latin names, but, believe me, a time will come—not in our time, but still certain to come—when there will be only one universal language in the whole world, and that will be the English tongue.

(To be continued.)



KITCHEN GARDEN.

TOMATOES.—These are the most profitable of all early vegetables. In many cases they prove more remunerative than Cucumbers or Grapes, and all who have a heated pit or house should grow them. We are about to plant out our first Tomatoes. They were propagated from cuttings in November, and now they are sturdy well-rooted plants 6 inches high. They will be planted in small mounds of moderately rich soil along the front of a low pit, and they will be trained with a single stem under the glass. When near the light, and in a temperature of 60°, there is no difficulty in getting them to grow and fruit at once, and such plants will bear many ripe fruits in March and April. All who have plants from autumn cuttings should treat them well to secure early fruit, and those who did not take our past advice and secure cuttings should sow a pinch of seed at once. It will germinate freely in a temperature of 65°, and the young plants will progress favourably in the same temperature, but they will not fruit as soon as the cuttings. Where only a few fruits are required for private use the plants may be fruited in a 10-inch pot. Do not give them too rich a soil. Keep them well in the light, and never allow them to make superfluous growths. There are many corners in glass houses where a plant may be placed that will soon be valuable, and whatever way they may be grown, be sure and grow them, as they are much too valuable to be neglected early in the season.

MUSHROOMS.—The first of our beds were formed in cool sheds about the middle of October. These began to produce Mushrooms before November was over, and they are bearing now, but they show signs of failing; and where such is the case clean all hay or any other covering from the surface and supply the bed six or eight times with water heated to 90°. This will soon put fresh life in the manure and spawn, and a second crop almost equal to the first will be the result. Next day, after watering, place a thick layer of hay over the surface, and change this as it becomes too damp. Place a good covering of dry hay over all beds due to produce Mushrooms; it keeps them warm, and prevents the cold winds injuring the "buttons." Make up more beds for yielding in February and March.

HOTBEDS.—These are indispensable for the production of the first crops of Horn Carrots, new Potatoes, and young Radish. We have tried them in all the winter months, but the greatest success attended those framed and planted at the end of January or the first week in February. Indeed we have found Carrots sown then just as early and better in quality than others sown in December. When sown in the latter months they have a long period to struggle into existence and gain strength, whereas, if sown after the new year they have the weather more and more in their favour weekly, and this is a great advantage. We are, therefore, not forming any beds yet, but merely collecting the material, and all should do this. Tree leaves, stable manure, and refuse of all kinds may be used to make up the beds. See that the frames are put in good order, and wash and clean the glass lights.

FORCING.—We have now quantities of Asparagus, Seakale, and Rhubarb. They are all forcing freely and yielding abundantly, but although one supply of each may be much valued at Christmas or the new year, they will be greatly appreciated all the spring, and where roots are plentiful place fresh roots in heat every three weeks, or oftener if the demand requires it. The more the season advances the easier will forcing become, and where there are surplus roots it is much better to force them early than late, when the produce decreases in value. Rhubarb roots especially are often too plentiful in gardens, and if they were forced now the produce would fetch six times the price obtainable in May, or when it grows naturally.

LIME IN VEGETABLE QUARTERS.—In our opinion lime is not used so often and freely in vegetable quarters as it should be, and when any

quarter exhibits the slightest inactivity a dressing of lime will invariably improve it. It is also astonishing how well vegetables thrive on lime. We do not apply lime in any given quantity, but use our judgment as to the requirements of different quarters. We do not believe in a heavy dressing compensating for a great deficiency, as it may be overdone, but small dressings frequently applied are most beneficial.

FRUIT FORCING.

MELONS.—Sow the seed at once for the first crop. They may either be sown singly in 3-inch pots, or a dozen or more may be placed round the edge of a 6-inch pot, to be afterwards placed singly into 3-inch size. In either case the pots should only be about two-thirds filled with soil, covering the seed about half an inch deep, plunging the pots in a bottom heat of 80°. Good fibrous loam and leaf soil in equal proportions gently pressed down will form a porous compost for the young rootlets, it being important for this early sowing that the pots be efficiently drained. It is of the greatest importance that the seedlings be kept near to the glass. The varieties of Melons are so numerous that it is difficult to make a selection, but Benham Beauty, Blenheim Orange, Read's Scarlet-flesh, and Scarlet Premier may be named as good in the scarlet-fleshed section. Eastnor Castle, William Tillery, Hero of Lockinge, and Longleat Perfection of the green and white-flesh sections are first-rate. Ripe fruit from a sowing made at this time may be expected at the close of April or early in May. A temperature of 65° to 70° night, and 70° to 75° day is suitable.

CUCUMBERS.—Young plants just coming into bearing should not be overcropped, and assist them by removing staminate blossoms as they appear. Plants in bearing will require to be cut over at least twice a week, removing all weakly and exhausted growths, reserving as much of the young growths as expand their foliage, overcrowding tending more than anything to disaster, inasmuch as it must end in denuding the plants of a large extent of foliage. Stop the shoots at one or two joints beyond the fruit, but young plants should be allowed more freedom, avoiding overcrowding. The temperature by night should be 65° to 70°, 70° to 75° by day, with a rise of 10° or more from sun heat, admitting a little air at 80° if the external air be moderately warm and soft, but if cold and sharp it is better to allow the temperature to advance a little higher than admit too much cold air even when the sun is powerful. A little flowers of sulphur dusted on the foliage, walls, and pipes is a 'good preventive' of mildew and red spider, and quicklime rubbed well into any part of the stems affected with canker will subdue it. The floor and other available surfaces should be damped in the morning and early in the afternoon.

Sow now for planting next month in pits or frames heated by fermenting materials, which should be in process of sweetening for making up the beds. If no convenience exist for raising the plants a bed of fermenting materials should be made up forthwith, the seed to be sown so soon as the bed affords a suitable temperature—70° to 75°. Plants from this sowing will be available for house planting to afford a late spring and early summer supply of fruit. Telegraph, Cardiff Castle, and Tender and True are good varieties.

PEACHES AND NECTARINES.—*Early Forced.*—In the earliest house the trees will be in blossom. As soon as they expand the night temperature may be maintained at 50° to 55°, the latter only when the nights are mild, 55° by day as a maximum in severe weather by artificial means when the sky is overcast, 65° by day from sun heat, and if the air be mild a few degrees (5°) more may be allowed. Syringing at this dull time must cease, but damping the floor and border may be practised in the morning and early afternoon on bright days. Lose no opportunity of ventilating freely when external conditions are favourable, and when the pollen is ripe choose the warmest and driest part of the day for aiding its distribution by shaking the trees or trellis, or taking a camel-hair or feather and gently applying the pollen to the stigma. If there be a deficiency of pollen of any variety it may be taken from those that afford it plentifully, and applied to the stigmas of the flowers sparsely furnished with that essential of a good set. The outside border must be protected with litter or some other protective material, the inside border not being neglected for water.

Second Early Forced House.—The house containing trees to afford ripe fruit early in June should now be closed, damping the trees and house two or three times a day, turning the heat on by day for an hour or two in the morning, but not so as to exceed 50° by artificial means, allowing it to rise to 65° with sun heat and free ventilation. It will suffice if frost be excluded at night. The borders must be brought into a thoroughly moist state by repeated waterings, and the outside border protected with litter, but not of a depth to heat violently. A gentle warmth of not more than 60° to 65° will do no harm, but more heat is hurtful. All that is wanted is a covering to prevent chill from frost and snow.

Late Houses.—These should be put into order forthwith, and if any trees are swelling the buds more rapidly, which is not the case where the roof lights have been removed, than is desired, a covering of mats over the lights will prevent the temperature being raised by sun heat to a prejudicial degree, retarding the flowering considerably.

Strawberries in Pots.—Do not push the plants too rapidly in severe weather, 50° to 55° will be sufficient at night for those that were started last month, and 60° to 65° by day, but it is always well to err on the safe side; therefore 5° less in the absence of sun, the weather being cold, is advisable. More plants should be introduced to shelves in Peach houses or vineries started about this time. The pots should have the drainage rectified if necessary, the surface of the soil freed of moss or other matter, and the pots washed. A surface dressing may be given of rich material, as a pinch between the finger and thumb of Amies', Clay's, Jensen's, Beeson's, &c., manure, stirring the surface lightly. If space some fine manure mixed with some bonemeal and soot—a quart each to a bushel of the manure and well incorporated—will prove advantageous and a great encourager of surface roots. Suitable varieties for introducing now are La Grosse Sucrée, Vicomtesse Hericart de Thury, Sir Harry, and President. Noble (Laxton) promises to prove an admirable variety for forcing.

Cherry House.—The house being closed last month as advised, fire heat may now be applied so as to maintain a temperature by artificial means of not more than 40° at night and 45° in the day, advancing 10° by sun heat, ventilating at 50°, and closing at that point. Ventilate very freely in mild weather, and avoid hasty treatment in the early stages of growth. See that trees in pots or tubs are not neglected for water, and sprinkle the trees and house occasionally in the morning and afternoon in bright weather.

PLANT HOUSES.

Loam.—If not already under cover a good supply should be wheeled in without delay and broken up ready for potting purposes as opportunities offer. It is best to break it up with the hand, so that worms can be removed as the work proceeds. That intended for choice plants should have the fine removed, in fact all that will pass through the meshes of a ¾-inch sieve. The latter can be passed through a fine sieve, so that there will be three sizes ready for potting and seed-sowing when these operations require attention. It is surprising how rapidly work can be pushed on at that busy season when the soil is ready for lifting on the bench and only needs mixing. Every effort should be made at this season of the year to have all in readiness to forward work that will press heavily in every direction.

Peat.—This should be sorted into three distinct qualities, for Orchids, Ferns, and hardwooded plants. For the first that possessing the most and toughest fibre will be satisfactory; for the Ferns the lightest and least fibrous portion will do very well, while that of the hardest should be selected for the third class of plants. In the preparation of that for Orchids break up with the hand and remove all the fine from amongst the fibre. The soil portion will be found useful for small Ferns and many stove plants in a small state. In each of the other two cases the peat may be stored as broken up, but roots and the rhizomes of Ferns in each case should be removed, for they have a tendency to create fungus when they decay. Remove all grassy matter from the top of the turves, but do not throw it away, as is too often the case. It is valuable for placing over the drainage to prevent the fine particles of soil clogging it and thus render it useless.

Manure.—Cow manure that was stacked under cover in autumn and is sufficiently dry, should be rubbed through a half-inch sieve. Horse droppings that have been prepared by being frequently turned to sweeten it, may also be passed through the same sieve. This must not be stored too thickly afterwards, or it will heat violently, and thus be practically useless. Old Mushroom bed refuse may be passed through a larger sieve, and stored ready for use under cover. That which remains in the sieve should be preserved ready for placing over the drainage of Fuchsias, Balsams, Coleuses, and plants that require liberal supplies of manure. The necessary supply of artificials must be ordered so that they will be ready for use when wanted. Those purchased in bags should upon arrival be placed in tins or large jars that can be made secure at the top. The necessary quantity of half, quarter, and fine bones may also be obtained ready for the time when they are needed.

Leaf Soil.—This useful vegetable soil must be stored in quantity. It should be passed through a half or three-quarter-inch sieve, to be certain of removing all small pieces of wood or Beech nuts, and it is often necessary to pass the mould through a finer sieve. Provide a good heap of very fine material, for it will be found invaluable for mixing in fine composts that are needed for seeds. A good supply of rough material must also be at hand, and in a suitable condition for placing over the crocks in pots, pans, and boxes, that may be required for a variety of purposes.

Sand.—The necessary supply for the season can also be provided if it was not stored in autumn, which is the best time to purchase it before it becomes saturated by heavy rains. Two samples, one coarse, and the other fine, will be found the most serviceable, although this is not absolutely necessary. For years we have only had one sample, and that a very fine one. For special purposes a supply is washed as opportunities occur.

Charcoal and Crocks.—The former should be sorted into various sizes, and is there is an insufficiency of small, some may be broken up so that it will not have to be done when it is wanted. All crocks may be washed and then passed through various sized sieves. Five or six different sizes must be prepared, and then the drainage of pots is not a long process. When the crocks have to be broken when needed it takes nearly as long as potting the plants.

Sphagnum Moss.—Sort this from time to time until sufficient has been prepared for potting all the Orchids and other plants that need it. Keep the rough material for placing over drainage, the green heads being selected for top-dressing, and the remainder can be chopped up ready for use. The selected heads will quickly improve if they are placed in an intermediate temperature and syringed occasionally.

Pots.—See that the stock of these is ample for the purposes required

if not secure them at once. It is a mistake, and betokens bad management, to have to wait for pots. Attention to these small matters are frequently of the utmost importance in achieving success.

THE FLOWER GARDEN AND PLEASURE GROUND.

Preparing Composts.—In most pleasure grounds one or more heaps of rubbish are formed, and these accumulations ought to be turned to good account. Supposing all the sweepings, grass from the mowing machine, road and walk trimmings, leaves and rubbish generally are all thrown together, all this in frosty weather or at any time when other important work has to be stopped, should be completely turned and mixed, at the same time throwing out all sticks and other insoluble rubbish. The latter and as much useless wood as can be collected should be burnt and the ashes added to the big heap. In this manner a fairly valuable compost is created, and which will be found most suitable for mixing with the ordinary soil when trees and shrubs are planted. Very frequently such material is all that we have for either manuring or mulching the flower beds, and its use and early digging has gradually improved the character of our naturally heavy soil.

Leaf Soil.—A bountiful supply of good leaf soil is unfortunately not within reach of half the gardeners in the country, and very many that might have abundance either neglect to save it or else spoil the leaves by allowing them to unduly heat themselves. Hotbeds invariably spoil the leaves, and the very best leaf soil for all purposes, and which is especially suitable for tender bedding plants is obtained from dry ditches in the woods. Where available this should be collected and used in preference to any prepared somewhat artificially. If a mass of leaves has been collected, especially for leaf soil, this should be frequently turned in order to insure a regular and even decay without generating any mould or fungus. It is the centres of the mass that is first overheated, and this literally spoils the whole heap. Frequent turnings prevent this and admit of all sticks and rubbish being separated from the leaves. Fairly good leaf soil will, in the course of two seasons, be formed in the deep holes filled with leaves, this being the method sometimes adopted of getting rid of them.

Hotbeds for Propagating Purposes.—A hotbed formed of well-prepared heating material, notably a mixture of leaves and stable manure, are most suitable for either raising plants from small seeds or cuttings. Where possible this hotbed should be placed in a forcing house or early vinery. The manure ought to be first thrown into a heap and allowed to ferment for a few days, being then turned inside out and again allowed to heat, and once more turned. When it has sweetened somewhat mix manure and leaves together, and in the course of a week the heap ought to be ready for use. Either all manure or all leaves and all tan, or a mixture of tan and leaves may be used, anything in the way of a fermenting hotbed being preferable to the dry heat generated by the hot-water pipes.

A Useful Heap of Soil.—When the busy spring months arrive there is little time to spare in collecting soil suitable for surfacing seed beds, seed boxes, or for potting and boxing off a great variety of bedding plants. A large heap ought to be prepared in advance. Usually all the rubbish and old potting soil that accumulate under the potting bench is wheeled to a heap where it is well out of the way. This should be screened or passed through a half-inch sieve, and the rubbish sorted over and as much of it as possible burnt. Then if this fine sandy heap is mixed with the soil removed from the surface of Cucumber and Melon beds a heap of really good compost results, a little good leaf soil and sand rendering it fit for almost any purpose connected with raising and growing bedding plants.

Commencement of the Propagating Season.—Many experienced a great difficulty in procuring a sufficiency of bedding Pelargonium cuttings, and will have to depend largely upon spring-struck plants. It is much too early to attempt striking cuttings, but when the early vinery is started all the old plants of Zonal Pelargoniums may well be started too. Hardwooded cuttings will not strike with any certainty, but if the old plants are induced to grow strongly sufficiently matured young shoots may be obtained for striking, and these in their turn will give a good cutting. As a rule the spring-struck plants flower quite as freely as those struck in the autumn, and those with variegated foliage are frequently the best when rooted in the spring. Old or stock plants of Heliotropes, Ageratums, Verbenas, Abutilons, Petunias, and Marguerites if shortly introduced into gentle heat will soon give a batch of good cuttings, and an early start be thus obtained.

Plants in Frames and Pits.—Where the bulk of the bedding plants are wintered in well heated houses and pits not much difficulty is experienced in keeping them alive. Many, however, have yet to store a lot of plants in unheated frames and pits, and these are now having a trying time of it. Pelargoniums, whether in pots or boxes, ought to be kept quite dry at the roots for at least another six weeks, and have all decaying leaves removed whenever seen. Verbenas, Lobelias, Ageratums, Heliotropes, and Petunias must not be allowed to flag for want of water, but even these ought to be kept on the dry side. All the watering necessary should be done in the mornings of clear days, and plenty of air given at the back of the lights whenever the weather is not frosty. We have already had several severe frosts, but we usually experience the most penetrating in January. All frames and cold pits ought now to be surrounded with dry litter or leaves enclosed with hurdles, while the frames whenever severe frosts are anticipated should first be covered with either dry mats or old carpeting, these being covered with a good depth of strawy litter. It may be necessary to leave them closely covered for a week or more, as it is unwise to uncover when the air is still frosty. Should the frost reach the plants at any time, however slightly, do not suddenly uncover, but allow them to thaw gradually and in the dark. Badly frozen plants should be freely damped overhead with cold water, and then kept closely covered till thawed. A rapid thaw is most injurious.

THE BEE-KEEPER.

NOTES ON BEES.

THE WEATHER.

DURING the months of November and December the weather has been changeable, frost, snow, and rain alternating with extreme mildness for the season, the temperature often being above 50° Fahr. The lowest temperature during November was on the 24th, the thermometer registering 19°, and the lowest during December was 10° on the 22nd in North Britain. On the last day of November and on the first day of December the thermometer stood above 50°, and the bees were alert, many of them on the wing, and a great number gathering water, evidence that, owing to the mildness, breeding had begun earlier than is usually the case. One hive in particular was very busy, and killed the last of its drones on the 1st of December. This hive, I believe, had a young queen, which, I believe, was fertilised as late as the 27th October, but I have not sufficient data at present to confirm this, but a few weeks will prove it, as the bees were half-bred Syrians, and the only drones living were Carniolian. In addition to the above hive, either two or three had preserved their drones until the two days mentioned. On the 1st of December I saw many searching for peameal as well as searching the Arabis, which is still in flower, a sure sign that breeding was going on, and that they still remembered the peameal site, although more than two months had elapsed since they had been supplied with any. The only other thing worth recording at present among my hives is one wintering on one comb. The bees of this hive had been neglected in feeding, and what they did get owing to the cold in October was stored in one comb, which the bees had built in the endeavour to concentrate all the heat possible. I transferred the comb and bees to a division of a square hive, adding a small super of honey on the top. The queen was deposed and a pure one introduced, and as this was the coldest day in November, manipulation was carried on inside at a temperature of 60°. When a hive is weak and showing signs of distress an apartment (with but one pane of glass) should be heated until the temperature is at least 60°, then the hive placed near the window so that the bees will readily creep back after they have rid themselves of all encumbrances. When the room is very warm more light may be admitted, and the bees will fly more readily, and although they rest upon the floor will all rise and return to their hive. The wintering of bees without combs is not new. Upwards of thirty years ago a swarm of bees were kept in an attic and regularly fed, with no comb whatever.

HINTS TO BEE-KEEPERS.

Hives properly and thoroughly prepared during September and October for the winter should not be disturbed or altered in site or appearance, and if previous instructions have been attended to, need not be meddled with until April or May, and probably not even then. Beware of shading hives during snow, if the bees have their liberty, as the slightest obstruction near their hive mars them, and many bees are lost, so that the cure is here worse than the disease. Snow is the greatest enemy we have to contend with, but is most dreaded after the days lengthen, when the temperature is likely to rise above freezing. So long as it is below freezing little danger may be apprehended. With our ventilating floors bees are easily managed during spring snowstorms, but hives without these run a great risk in being shut in during the time snow lies on the ground. The safety valve lies in darkening the entrance, ventilating

from another part of the hive, and this applies to all times and forms of confining bees to their temporary hive.

THE PURGATORIAL PROCESS.

At page 527 "A Hallamshire Bee-keeper" asks if I can refer him to a publication containing information on the above. Beyond what I described, and that the most can be found in the *Journal of Horticulture* from 1862 and onwards, I do not know of any publication that will give the desired information. Previous to the first Crystal Palace Bee and Honey Show I wrote and entered an essay on the subject, along with other articles for competition, but the magnates would not admit them for competition, although they accepted the entry money and granted a receipt for the same. The essay contained my experience with the disease, and modes of cure, the most effectual being baking in a dry oven all hives affected, and putting the bees through the purgatorial process. As the exhibits were not so much as returned, I have not the MS., but I believe a portion of it at least was published in the *British Bee Journal.*

At page 77 in my essay to the Highland and Agricultural Society, the following occurs. Although it is not so explicit as it might be, still there can be no doubt in the minds of unbiassed persons that two changes at least were intended to eradicate the disease. I have often changed the bees to clean quarters four times before giving them a permanent hive. "Meanwhile the bees from affected stocks should be put through the purgatorial process—*i.e.*, into an empty hive for at least forty-eight hours, then after that changed again, so that the impure honey carried along with them may be expended in comb building." It will be observed, although the second change is not stated to be temporary, the closing words make it obvious enough. As to keeping them in confinement, although bees will build comb in confinement, still, when at liberty, they will do it more readily, and get rid of all infection, and to better purpose, than if the bees were confined. In one of the numbers of this Journal there is a letter of mine, describing the baking process, and the effects of the fumes from the stove upon the disease.

THE STEWARTON HIVE.

In answer to "T. J. J.," "J. T.," and others, on the merits of the Stewarton hive, I will now give the desired information, trusting the unavoidable delay will not lessen the interest in the much-maligned hive, that for producing honey of the greatest quantity, and of the finest quality, stands unsurpassed. The first query on my list is by "J. T." "Would you advise me to use the Stewarton hive solely, and do you use it solely yourself?" It depends entirely upon circumstances whether the Stewarton hive may be the only one used in the apiary. If the produce is for the bee-keeper's own use it is the best hive, but if the bees are kept solely for profit, and the comb in the large supers found to be unsaleable, then it would be more judicious to use the square form, which is also the Stewarton hive, having been used throughout Ayrshire before the octagon form invented and introduced by "Bee Robin." But even the octagon form need not be a hindrance if small parcels are wanted. The Stewarton was the first hive to carry sectional and divisional supers. The sections used were half and quarter—*i.e.*, the supers were made in halves and quarters, and the bars of supers were from the first moveable. If these half and quarter-sized supers, or the full-sized ones, do not suit your tastes, nor the market, then there is an alternative of using sections suspended to the top bar as recently described. The only objection to these is, the outer sections are of a different size from the centre ones, but as the outer bars are not too large, they form capital sections, as they did originally. Where dripped honey is in demand no better hive exists for the purpose than the Stewarton one. I do not use the Stewarton hive solely myself, having three or four sorts of hives. I have a per-centage of them, but would not hesitate to have the Stewarton only; but the square ones, being cheaper at first, and better adapted for producing uniform small parcels, and being in reality the Stewarton hive, I tried most of the cheap square pattern. This hive, with its improvements, is perhaps as good for wintering bees as the octagon at first was, but I must admit that, on the whole, the Stewarton hive gives me the best returns, therefore can recommend it to others where equal-sized combs are not a desideratum.

SUPERING.

From what has been written on this subject of late it appears almost superfluous to extend the discussion, but as the query has been put by the same person, "Which is the best system of placing supers on hives? Should the empty ones be placed above or beneath the partly filled ones?" It is a law with bees, as it is in Nature, they abhor a vacuum; therefore when an empty super is placed beneath a partly filled one, the bees are, for the time being, thwarted in their natural order of working. It may, however, be advocated that supering is unnatural. So it is to some extent, but when an empty super is put on a hive, the bees, with favourable weather, fill it by arranging themselves so that there shall be no space between it and the brood nest, in the most natural and comfortable way to themselves, and when a super or more has been filled in this way and left on the hive, it is the last honey that will be consumed by the bees.

Should unfavourable weather set in while a Stewarton super is being filled, by judiciously regulating the slides its purity is preserved, but not so in the case of supers wrought on other hives of a different construction. When an empty super is put over a partly filled one, the under one is not affected by the process, whether the weather keeps favourable or not. But if the empty super takes the place of the full one, the latter becoming the super proper, should the weather become unfavourable at this time, the bees will either remain in the upper one in a listless idle state, soiling and emptying the combs, or they will start in earnest and carry the honey down. They may commence, if the weather is partially favourable, fill the empty super with comb at the expense of the upper one, and in nine cases out of ten no supers will be had; whereas, had the bees been allowed to nearly fill their first super before another was added, and it was placed over the one in progress, remaining there until the bees took possession of it, then, but not before, should the first super be raised over another one partially begun. This course followed, the bee-keeper will not disappoint himself, and secure more honey and purer comb than if the empty super had taken the place of the full one, which at all times is contrary to the natural working of the bees.

The foregoing applies wholly to full sized supers, but where sections are used as I recommended, or small supers, by far the best plan to work them is to raise the one half of the partly filled ones on the top of the other half, and on the warmest side of the hive, if that can be distinguished, then put empty ones in the place of those removed. There can be no objection to this plan, and the bees will not desert any of the supers, nor remove any of the honey, and if the bees are numerous enough, and the weather favourable, a manipulation every two days will be necessary, removing the supers when finished, adding empty ones as required, but never underneath partly filled ones for the reasons given above.

Supers are generally filled so quickly that it is impossible any discolouration can take place, or rather that any stain can be conveyed to the combs by allowing the first super or supers to be nearly finished before changing their position Should there be any likelihood of that occurring, it can be prevented by the working of the slides as stated above. During the Clover season of this year the system of placing the partly filled super uppermost answered very well, but at the Heather it proved a failure in every case tried. It may be many years before we have such a summer as the one of 1887 was, and I know that during more than forty years there has not been more than four or five favourable to the placing the partly filled super above an empty one; and as there

is no advantage gained by following the practice it is better the bee-keeper should err on the safe side.—A Lanarkshire Bee-keeper.

COLLAPSED COMBS.

Having lately had a few swarms of bees placed under my care, I had a swarm put in a home-made hive, and through some cause, probably the frames being not properly fixed, the combs fell to the bottom of the hive. I should like to know through your columns the best way to proceed with them now. My intention is to cover them securely and leave them as they are till February, and then transfer them to another hive. An answer through your columns would oblige.—A Gardener.

[An omission of an important nature has been made in not stating when the combs collapsed, which materially adds difficulty in giving proper instructions how to proceed. If a few frames of comb can be procured, either from some in store or from the other hives, place these into an empty hive, failing which fill a few frames with comb-foundation and drive the bees from the hive having the collapsed combs into it, after the frames have been secured against falling out when inverted by screwing a strap of wood over the tops of the frames. After the bees have been all driven (and this operation should be performed in a close warm compartment having but one window), remove the bottom rails from the frames. Now invert the hive to its original position, and draw out frame after frame until all are removed. Then you have full command of the combs, which must be carefully lifted out, as they are probably delicate, having collapsed through that rather than any defect in the arrangement of the frames. Then proceed to transfer the combs to frames, fixing them with wire to the best advantage you can. Be careful to straighten the combs after heating slightly should any be crooked, and the better the frame is filled the easier the combs are held. After this operation, with the bees still in the warm apartment, replace the transferred combs amongst the bees. To wait until February you would have the advantage of getting a finer day for the operation, but the disadvantage of having brood in the combs, losing much of it by the manipulation, as well as the combs mutilated and fastened together by the bees attempting to restore their dwelling. After all is finished and all the bees safe inside their hive, keep it still in the room till after dusk, then place it on its site. Of course, feeding must not be neglected if required. Bees take feeding in January readier than further on in the season.]

TRADE CATALOGUES RECEIVED.

H. & F. Sharpe, Wisbech.—*Wholesale Catalogue of Garden and Agricultural Seeds.*

Robert Veitch & Son, 54, High Street, Exeter.—*Catalogue of Kitchen Garden and Flower Seeds.*

Charles Turner, Royal Nurseries, Slough.—*Catalogue of Kitchen, Flower Garden, and Farm Seeds.*

Stuart & Mein, Kelso, Scotland.—*Amateurs' Gardening Guide and Spring Catalogue.*

Oakshott & Millard, Reading, England.—*Spring Catalogue, 1888 (Illustrated with Coloured Plates).*

Harrison & Sons, Leicester.—*General Catalogue of Choice Seeds, 1888.*

TO CORRESPONDENTS

*** All correspondence should be directed either to "The Editor" or to "The Publisher." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Chrysanthemum Sport (*J. W. Pontefract*).—The sport is very similar to Mrs. H. J. Jones, but the flowers sent are of a rather lighter tint. By all means preserve and increase the sport, as it will be found useful for late flowering.

Apple (*A. H.*).—We are obliged by your letter, and shall be glad to receive the specimens of both varieties to which you refer in due season. It is often extremely difficult to arrive at a true decision by an examination of a few fruits alone, as soils and stock influence their character.

Wood and Sons (*L. S.*).—In answer to your inquiry we have no reason to doubt the high character and integrity of this firm. Their specialities have given satisfaction to many cultivators, and their merits can be tested by comparison. We do not recommend dealers for reasons that must be obvious on reflection.

Dressing Vine Border (*H. T. H.*).—There is a great excess of nitrate of soda in the formula you submit for Vines. You may apply the other ingredients at once, supplementing with a dressing of nitrate of soda when the Vines have fairly started into growth, if you think they require a further stimulant, at the rate of about 2 ozs. to each superficial yard. A pound of the other ingredients may be applied to the same area if the border lacks fertility.

Thomson's Manure (*E. E.*).—By a clerical error it was stated last week that 2 or 3 ozs. per square yard is a proper quantity to apply. According to the directions in the pamphlet of the manufacturers 2 lbs. should be forked into Vine borders in the spring and half the quantity after the Grapes are thinned. This may seem a large quantity, but it is to be remembered that the roots of Vines in old borders are often far below the surface, and light sprinklings under such circumstances can have no appreciable effect on the Vines. For new borders half cwt. of the manure is recommended to be mixed with a ton of soil.

White Celery (*J. O.*).—We are obliged by the specimen you have sent. Though you say it is smaller than usual, it is quite large enough, equalling in that respect well grown examples of Major Clarke's or the Leicester Red. The stems are broad, solid, and crisp, and the flavour is all that we could desire, and quite "nutty." We think it a pity that such a good variety is not placed in commerce. Our correspondent "A Thinker," about whom you and others make inquiries, stated some time ago he intended taking a long rest, but how long we are not able to say. We believe he is quite well now.

Gas Lime (*An Old Subscriber*).—This is a hydro-sulphuret of lime with a little ammonia, and, rightly used, is beneficial both as a grub antidote and in affording nutriment to crops. You may find much fuller particulars respecting it and methods of using in an excellent article by G. Abbey in our issue of June 9th, 1887, than it is practicable to give in the form of a reply. If you do not possess that number, it will be worth your while sending 3½d. to the publisher. Gas lime should be applied two months before sowing or planting, soot shortly before seeds and plants are inserted; it will do much good, and probably an after dressing of salt would be of benefit on your gravelly soil for all the crops you desire to grow.

Gesnera cinnabarina (*E. James*).—This is one of the most brilliant and beautiful of stove plants for flowering in the winter. Those which you have seen and admired were probably started about midsummer. We have potted tubers at that time, and started them in a frame, and have grown the plants in it till September, or as long as the weather was warm enough, then placed them on a shelf in the stove. They usually commenced flowering in January, or when the Poinsettias were nearly over, producing an effect not surpassed by those plants during a period of two months. Fine plants may be grown in 6-inch pots, forming dense pyramids of orange-scarlet flowers and handsome velvety leaves, which contribute materially to the beauty of the plants.

Bones for Vine Border (*F. S. D.*).—Turf being considerably lighter than ordinary loam and liable to reduction in bulk from decay, the proportion of bones must be calculated accordingly. A ton of crushed bones may be added to every 40 cubic yards of turf, so that for the 330 cubic yards you would require 8 tons of bones, which we consider are more lasting in effect in the crushed state than in the form of meal. You must be preparing for a very large border, and it is worth consideration as to whether it would not be better to make it in sections than to fill the whole space at once. You do not state the length, width, and depth of the intended border, but assume you have made no mistake in your calculations.

Raspberries Failing (*S. P. L.*).—The long drought and great heat of summer was the reverse of favourable to new plantations of Raspberries, and good canes for fruiting this year could scarcely be expected if the soil was not kept moist by occasional heavy watering and constant and thick mulchings of manure or other material for arresting evaporation. Further, when newly planted canes are left their entire length strong suckers cannot be relied on, and it is always better to shorten the canes to within about a foot from the ground. It is true when unshortened they may bear some fruit, but rarely a good crop, and the support that this requires arrests the growth of suckers We consider it preferable to sacrifice a poor crop of Raspberries the first year than a good one the second, in years succeeding. Procure well-rooted canes; plant them on the first favourable opportunity in good and well-worked soil, cut them down, and mulch thickly with manure for a foot at least beyond the extension of the roots. It may be well also to remember that rather small canes well rooted are better than very strong canes with few roots for establishing a plantation quickly.

Tomatoes for Market (*Constant*).—You had better read Mr. Bardney's article on page 441, November 24th, 1887, and if you do not possess the number it can be had from the publisher in return for 3½d. in stamps. Mr. Bardney, who has had experience in the matter, observes that large fruits such as are seen on exhibition tables are not appreciated by purchasers, who prefer about four fruits to a pound to those weighing

8 to 12 ozs. each, and they should not be deeply corrugated. For early crops for sale he intends growing Sutton's Earliest of All more extensively. It is also one of the best for outdoor culture. Laxton's Open Air Tomato has also been found good for this purpose. For culture under glass Mr. Bardney found Hackwood Park (removing a few of the first fruits that grow too large and coarse), Acme, and Hathaway's Excelsior the most profitable. Other cultivators may possibly have found some other varieties equal to those mentioned for the purpose in question, and if so it might be useful to name them and indicate their merits. We have noticed that the most extensive growers of Tomatoes for market aim at producing heavy crops of medium-sized fruit rather than a lesser number of large fruits, though the weight of the crops might be equal in both cases.

Outdoor Mushroom Beds (*Cambridge*).—Possibly the beds were too small or insufficiently covered for retaining the heat, or it may be, as you suggest, the manure was "too rotten." In the latter case the spawn would not "run," and if it did not do so within a week of its insertion, and continued spreading for two or three weeks more, we fear your prospects are not very bright for a good crop of Mushrooms; but if the manure was not too much decayed and the heat was sufficient for a month for the growth of the mycelium, the subsequent cold would not destroy it, and Mushrooms may appear when the weather is warm enough, perhaps in April. All you can do is to adopt a waiting policy, and we do not advise you to incur any material expense in the matter. On a mild dry day turn the covering, removing that which is decaying from the soil and place it on the top, and if you can find any old mats, sacking, or sheeting to place over the litter this extra covering will be an advantage—that is, if the spawn was not spoiled at the outset, which may or may not be the case, though from what you say we suspect it did not spread freely, and that is why we dissuade you from incurring expense you desire to avoid in covering materials.

Chrysanthemums (*H. H. C.*).—We have no recollection of recommending the varieties you name, nor should we be likely to name them as forming a good selection, and certainly not if varieties with fairly large blooms were requested, for the two Cedo Nullis and Golden Madame Marthe are Pompons, and good of their kind, but essentially small, and cannot be otherwise as compared with large flowering varieties. Most of the others you name produce blooms varying from 4 to 8 inches in diameter when well grown. We observe they are all Japanese varieties except the Pompons, and we are in doubt, therefore, as to whether you need a list of Japanese exclusively, or whether you desire other types, such as incurved and reflexed, to be included. If you will be good enough to inform us on that point, also state whether you wish to grow blooms for exhibition or plants for greenhouse decoration, your letter shall have our attention, and varieties chosen that are likely to give satisfaction if well cultivated. It is important to know your object. For instance, the three varieties, Mrs. G. Rundle, Mrs. Dixon, and George Glenny, white, yellow, and primrose respectively, are amongst the most free and useful for decoration, but the blooms (incurved) are seldom large enough for exhibiting in stands.

The Thanatophore (*T. M.*).—The statement on page 541 as to Mr. B. S. Williams using the thanatophore as an exterminator of insects at Holloway, and that it is there found effective, and injures neither Orchids nor Ferns, is quite true. If it did not destroy the insects and did injure his plants he certainly could not afford to use it. At the same time we are quite aware that it has not given satisfaction to all who have tried it, though it has to many. We have made inquiries on the subject, and if we were to publish all the replies we have received you would be more perplexed than you are now; and as we must publish all or none we choose the latter alternative. The owner of a valuable private collection of Orchids, which has been collected at great expense, finds the vapour from the thanatophore the best and cheapest of all agents for keeping them clean. Another extensive cultivator of these plants has not found it answer his expectations; a third offers to sell his thanatophore, and a fourth was so pleased with one he tried that he procured another. So far as we can judge those who have failed with the appliance have (1) either procured one not large enough for their houses, (2) erred in some way in its management, or (3) used inferior tobacco juice, this varying considerably, some not appearing to answer at all for the purpose in question. We are not justified in publishing the names of correspondents who have written to us on this subject, and thus impose on them an amount of private correspondence that would be inconvenient; and we think Mr. Williams can supply all requisite particulars.

Writing for the Press (*P. A. R.*).—The articles to which you refer in two journals were written by the same person, but some of them were carefully edited, while others were not. We have pleasure in revising articles that contain sound or interesting information, and not a few gardeners have so far profited by that form of teaching as to now be able to express themselves in a manner that is most commendable and not disadvantageous to them. Whatever a man undertakes he should endeavour to give a good finish to his work, whether in the garden or in the press. Slovenliness in either capacity should be sedulously avoided, and in both success simply resolves itself into a question of perseverance and taking pains. Competency is not attained in one or two lessons, but is within the reach of every intelligent man, even if, through no fault of himself or his parents, his education is more or less faulty. All such who endeavour to improve have our sympathy and assistance, if their communications indicate latent ability. Writers whom we cannot countenance are those who copy articles from one or more papers and endeavour to foist them on editors of others as original communications. Not long ago a pilferer was exposed in a gardening paper for transcribing articles from this and another Journal and getting them inserted as his own; and after that it will scarcely be believed that this same individual had the impertinence to send us matter for publication, without a word of apology for his reprehensible act. We observe he is again figuring in the press, and we advise him to act with great circumspection or he will be getting himself into trouble. At present we refrain from publishing his name and address.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*J. R.*).—1, Cellini; 2, Scarlet Pearmain; 3, Formosa Pippin; 4, Blenheim Pippin; 5, Kerry Pippin. (*J. M.*).—Large Apple, Dumelow's Seedling; small one, Reinette Van Mons.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*A. B. R.*).—The plant is Bouvardia Alfred Neuner, a favourite with bouquetists just now. (*Bury St. Edmunds*).—The Silver leaf or Silver Tree is Leucadendron argenteum. (*W. R. T.*).—1, Dicksonia antarctica. 2, Dicksonia squarrosa. As you say these Ferns are much alike, but if you compare them carefully you will at once see the difference. (*S. T. M.*).—It is a portion of the stem of Cocoloba platyelada or Muhlenbeckia, as it is now called. The Acacia you mention is not platypetala, but platyptera, which refers to the broad-winged stems.

COVENT GARDEN MARKET.—JANUARY 4TH.

TRADE again quiet, with no alteration.

PLANTS IN POTS.

	s.	d.		s.	d.		s.	d.		s.	d.
Aralia Sieboldi, dozen ..	6	0	to 12	0		Fuchsia, dozen	0	0	to 0	0	
Arbor vitæ (golden) dozen	6	0	9	0		Hyacinths, dozen	9	0	12	0	
,, (common), dozen ..	0	0	0	0		,, (Roman), doz.	9	0	10	0	
Azalea, dozen	24	0	42	0		Hydrangea, dozen	0	0	0	0	
Begonias, dozen	4	0	9	0		Lilies Valley, dozen ..	18	0	24	0	
Chrysanthemums, dozen	9	0	18	0		Lilium lancifolium, doz.	0	0	0	0	
Cineraria, dozen	10	0	12	0		,, longiflorum, doz.	0	0	0	0	
Cyclamen, dozen	12	0	24	0		Marguerite Daisy, dozen	6	0	12	0	
Dracæna terminalis, doz.	30	0	60	0		Mignonette, dozen	0	0	0	0	
,, viridis, dozen ..	12	0	24	0		Musk, dozen	0	0	0	0	
Epiphyllum, dozen	10	0	18	0		Myrtles, dozen	6	0	12	0	
Erica, various, dozen ..	9	0	18	0		Palms, in var., each ..	2	6	21	0	
Euonymus, in var., dozen	6	0	18	0		Pelargoniums, dozen ..	0	0	0	0	
Evergreens, in var., dozen	6	0	24	0		,, scarlet, doz.	8	0	12	0	
Ferns, in variety, dozen	4	0	18	0		Poinsettia, dozen	12	0	15	0	
Ficus elastica, each ..	1	6	7	0		Solanum, dozen	9	0	12	0	
Foliage Plants, var., each	2	0	10	0		Tulips, dozen pots	6	0	9	0	

CUT FLOWERS.

	s.	d.		s.	d.		s.	d.		s.	d.
Abutilons, 12 bunches ..	3	0	to 6	0		Lilies, White, 12 bunches	0	0	to 0	0	
Anemones, 12 bunches ..	0	0	0	0		,, Orange, 12 bunches	0	0		0	0
Arum Lilies, 12 blooms ..	5	0	8	0		Lily of the Valley, 12 sprays	0	9		1	6
,, French, bunch ..	0	0	0	0		Marguerites, 12 bunches	2	0		6	0
Asters, 12 bunches	0	0	0	0		Mignonette, 12 bunches	3	0		6	0
Azalea, 12 sprays	1	0	1	6		Narciss, white (French) 12 bunches	6	0		10	0
Bouvardias, bunch	0	6	1	0		Pelargoniums, 12 trusses	1	0		1	6
Camellias, 12 blooms ..	3	0	4	0		,, scarlet, 12 trusses	0	6		0	9
Carnations, 12 blooms ..	1	0	2	0		Poinsettia, 12 blooms ..	6	0		8	0
,, 12 bunches ..	0	0	0	0		Primula (single), bunch..	0	6		0	0
Christmas Roses or Hellebore, 12 blooms ..	0	6	2	0		,, (double), bunch ..	0	9		1	6
Chrysanthemums, 12 bchs.	15	0	24	0		Polyanthus, 12 bunches..	0	0		0	0
,, 12 blooms	2	0	4	0		Ranunculus, 12 bunches	0	0		0	0
Cyclamen, 12 blooms ..	0	6	1	0		Roses, 12 bunches	0	0		0	0
Daisies, 12 bunches ..	2	0	4	0		,, (indoor), dozen ..	3	0		4	0
Epiphyllum, 12 blooms ..	0	6	0	9		,, Tea, dozen	1	6		6	0
Encharis, dozen	4	0	6	0		red, dozen (French)	1	6		3	0
Gardenias, 12 blooms ..	9	0	12	0		,, yellow	6	0		9	0
Hyacinths, Roman, 12 sprays ..	0	6	1	0		Stephanotis, 12 sprays ..	0	0		0	0
Iris, 12 bunches	0	0	0	0		Tropæolum, 12 bunches	2	0		3	0
Lapageria, white, 12 blooms	2	0	3	0		Tuberoses, 12 blooms ..	1	0		1	6
Lapageria, coloured, 12 blooms	1	0	1	6		Tulips, dozen blooms ..	0	9		1	6
Lilium longiflorum, 12 blooms	6	0	9	0		Violets, 12 bunches.. ..	1	0		1	6
						,, (French), bunch	1	9		2	3
						,, (Parme), bunch	5	0		7	0
						White Lilac, per bunch ..	6	0		7	6

VEGETABLES.

	s.	d.		s.	d.		s.	d.		s.	d.
Artichokes, dozen	1	0	to 2	0		Lettuce, dozen	0	9	to 0	6	
Asparagus, bundle	0	0	0	0		Mushrooms, punnet ..	0	6	1	0	
Beans, Kidney, per lb. ..	0	3	0	0		Mustard and Cress, punt.	0	2	0	6	
Beet, Red, dozen	1	0	2	0		Onions, bunch..	0	3	0	0	
Broccoli, bundle	0	0	0	0		Parsley, dozen bunches	2	0	3	0	
Brussels Sprouts, ½ sieve	3	6	4	0		Parsnips, dozen	1	0	0	0	
Cabbage, dozen	1	6	0	0		Potatoes, per cwt.	4	0	5	0	
Capsicums, per 100 ..	1	6	2	0		,, Kidney, per cwt.	4	0	0	0	
Carrots, bunch	0	4	0	0		Rhubarb, bundle	0	2	0	0	
Cauliflowers, dozen ..	3	0	4	0		Salsafy, bundle	1	0	1	6	
Celery, bundle	1	6	2	0		Scorzonera, bundle ..	1	6	0	0	
Coleworts, doz. bunches	2	0	4	0		Seakale, basket	1	0	1	8	
Cucumbers, each	0	4	0	6		Shallots, per lb.	0	3	0	0	
Endive, dozen	1	0	2	0		Spinach, bushel	1	6	2	0	
Herbs, bunch	0	2	0	0		Tomatoes, per lb.	0	4	0	6	
Leeks, bunch	0	3	0	4		Turnips, bunch	0	4	0	6	

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve..	1 6	to 3 6	Oranges, per 100	4 0	to 8 0
Nova Scotia and Canada barrel	10 0	18 0	Pears, dozen	1 0	1 6
Cobs, 100 lbs.	55 0	0 0	Pine Apples, English, per lb	1 6	2 0
Grapes, per lb....	1 0	3 0	St. Michael Pines, each	3 0	5 0
Lemons, case	10 0	15 0			



OUR RENT AUDIT.

YES, even under the depression we hold an annual rent audit dinner, and we still find it "pays" to do so in the full sense with which that term is used by farmers. This annual gathering answers our purpose in several important ways, and though the collection of rent is in these hard times a matter of primary importance, yet not for that alone do we consider it worth while holding an audit. We meet many of the tenants of property under our control every week, and glad are we to know that our market stand is regarded by them as a sort of rallying point, where they can meet us and each other for cheery kindly greetings, and for the transaction of business, but at the rent audit we enter fully into an interchange of opinions—a discussion of the year's work and its results, and of possible improvement of practice in the future.

After dinner discussions are said to have the characteristic of a somewhat rosy tinge—a hopeful cheery view is then taken of life's burdens, and we grant that it is so in a very considerable degree at our rent audit. To have paid his rent in full under existing circumstances is an achievement of which any farmer may well feel proud, and doubtless the happy sense of it imparts a zest to his enjoyment of the dinner which nothing else could do. But on the other hand the deed and the dinner impart the courage of opinions which are subsequently often outspoken in an unmistakeable manner. Well, we like to hear the views of earnest practical men, and it is part of our experience that farmers are not a very demonstrative section of the community. We strive in the speeches which come after the dinner to excite discussion, and by the proverbial rubbing of heads together to impart and gain something which may do some good to all of us during the ensuing year.

Our readers hardly need to be reminded that our views upon the cultivation of the soil are clear, comprehensive, and we may add thoroughly practical; we take advantage of the audit to lay those views clearly before our hearers, and we boldly challenge discussion. The year, its work and results are all passed in review, the success or failure of crops, possible improvements in practice, new lights on any branch of farming are taken one by one, and details are treated of as fully as possible without becoming tedious. By imparting a popular tone to our address, by making slight personal appeals to any farmer whom we have found to possess special knowledge upon some important point of culture, we are able to fix and hold the attention of our hearers. We do not claim to carry them entirely with us, for there are dissentients among them who give as much "chaff" for our corn; but then criticism is always useful, for it promotes discussion, and we often find that the man who is most strongly in opposition to our views for the moment eventually adopts them and becomes our staunch supporter. This important fact is probably owing to our habit of avoiding any pretence to infallibility; we give a plain statement of our work, and explain results whether good or bad.

Perhaps we were a little egotistical when we told how our best Wheat field was that upon which only chemical manure had been used, with the satisfactory result of a crop of fully 56 bushels of corn and 2 tons of straw per acre, and we could not but invite attention to figures for one moment, as we explained that by the moderate computation of market values our corn and straw represented a total value per acre of £16 4s., or 32s. per quarter for the corn, and 50s. a ton for the straw. We know that straw can be had in some places for a little less than this, but we also know that in dairy districts it brings very much more. Compare such a crop with the average yield of about 30 bushels per acre, and we may fairly claim that farm land generally is not made to yield anything like a full crop. Depend upon it, many or most farmers would find their calling much more profitable if they had less land and higher farming, not model fanciful farming, but downright good practical work, which is the embodiment of our oft-repeated lesson—sound land, clean land, well drained, thoroughly porous, and well stored with all the requirements of the crop it is under. We know in our own practice that so-called "bad" fields are only bad because of bad treatment, and that when brought under high cultivation they often excel other parts of the farm. We had two examples of this upon two of the farms we have in hand this year; both were under Wheat, and we had little, if any, Wheat at all better than those crops, so that we were told the "bad" fields were for the first time bearing really good crops.

WORK ON THE HOME FARM.

Frost and snow have made our shepherds busy, an extra amount of care being now required for the management of the ewe flocks. We are using no roots yet, nor shall we do so till the lambing, when some Mangolds will be given—a few at first and more later on. We are fortunate in having plenty of grass, which has been held in reserve for some months specially for the present time. The ewes are upon it in small folds, and they have as much Pea straw in racks, and Barley straw chaffed in troughs, mixed with a few Oats. We are deaf to the entreaties of the dealers in oilcake to purchase some now for the ewes. We cannot afford it, and if we could we do not require the cake. Our sheep are well nourished, and we have no doubt that their progeny will be fine healthy animals. There are a few cases of foot-rot among them, and now that they are heavy with lamb they cannot be thrown to dress the feet; but we have them taken out for a quiet turn upon a road every morning, which certainly tends to keep under that troublesome disease. Preparations of the lambing folds must now be put in hand in order to have our arrangements complete by the middle of the month, when we expect our first lambs. Judging from the appearance of the ewes we shall have many early lambs or many twins. We select a place for the fold as much sheltered from cold winds as we can. Luckily we have a deep belt of underwood on the north and east of our fold, which we make quite snug by a wall of straw between hurdles and with numerous coils all round it inside, for which hurdles thatched with straw are used both for the sides and roofs. The bottom of the fold is kept well littered with clean straw throughout the lambing, and with good wholesome food and kindly gentle treatment we hope to avoid anything like serious losses among sheep or lambs. We repeat our warning to flockmasters not to let pregnant ewes have Turnips nor to be folded upon heavy wet land; if they do so losses are often serious, and the care and labour of a year rendered useless, to say nothing of the value of the sheep now.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE. 1887. December.	9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of soil at 1 foot.	IN THE DAY. Shade Temperature. Max.	IN THE DAY. Shade Temperature. Min.	IN THE DAY. Radiation Temperature. In sun.	IN THE DAY. Radiation Temperature. On grass	Rain
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 25	29.974	30.4	30.0	S.W.	37.9	37.7	29.8	42.6	24.4	—
Monday..... 26	30.0:9	28.5	28.2	N.	37.6	34.8	27.9	54.9	22.4	—
Tuesday 27	30.110	25.5	24.5	N.	36.8	34.4	24.3	57.2	19.2	—
Wednesday.. 28	29.936	34.1	33.1	N.	36.2	34.9	24.9	51.9	21.6	—
Thursday.... 29	30.234	2 .5	29.6	N.E.	35.9	35.4	28.0	54.8	21.9	—
Friday 30	30.193	34.9	34.2	N.W.	35.3	38.4	29.7	60.2	21.7	—
Saturday 31	30.217	33.7	33.7	N.	35.2	36.2	32.9	39.3	28.6	—
	30.103	31.1	30.5		36.4	35 0	28 2	51.6	22.8	

REMARKS.

25th.—Fine morning, with bright sunshine and white frost; fair till about 9 P.M., then drops of rain.
26th.—Fine throughout and cold.
27th.—Sharp frost in the night; cold but very sunny.
28th.—Fine morning; bright afternoon.
29th.—Fine and bright all day.
30th.—Bright and fine, and a little warmer.
31st.—Foggy morning; fair afternoon and evening.

A fine and cold week, the mean temperature being almost exactly at freezing poin . Slight falls of snow, but not enough to measure.—G. J. SYMONS.

CHOICE GARDEN CONIFERS.

SUCCESS with Conifers, as with most other hardy trees, depends, to a great extent, upon the suitability of the situations chosen for them and the care exercised in the selection of varieties. For extensive pleasure grounds and parks there are many strong-growing Conifers that can be advantageously planted in numbers. On the other hand, in gardens near the house, or wherever space is restricted, quite a different selection must be made, and ultimate success will depend greatly upon the judgment exercised in this matter. The position, soil, and climate of a garden also require consideration, as many fine Conifers will thrive in the south and west of England that prove quite unsatisfactory in the north, or in any cold exposed localities. In regard to this, however, protection in the early stages is a matter of much importance, as numbers of reputedly tender Conifers only need some adequate screens from cold winds for a few years until they are well established and growing freely. In most northern gardens abundant examples of this are afforded, and where suitable protection, by stronger-growing trees or shrubs, has been afforded, at the critical time, comparatively little difficulty is experienced in forming good collections of Conifers from Yorkshire or Northumberland in England, to Perthshire and beyond in Scotland.

For lawns and pleasure grounds in proximity to the dwelling house single specimens of the dwarf, bushy, or fastigiate Conifers, are preferable, but in their employment and the system of planting adopted there is room for the exercise of much taste. An undue proportion of the Biotas, Thuias, or plants of similar habit produce a most displeasing formality, and attempts to place such Conifers in clumps is usually unsatisfactory to a remarkable degree. Well-developed specimens of the green or golden Arbor-Vitæ, Yews, &c., have a fine appearance when not too closely placed, but it is necessary to have a fair proportion of the more graceful Retinosporas or Cryptomerias, with some deciduous trees and shrubs to avoid a monotony of tint. An admirable example of this mode of planting is seen in Baron Schröder's garden, The Dell, Egham, where the numerous specimen Conifers on the lawn and near the house are backed up with massive beds of Rhododendrons, the fragrant and profuse deciduous Azaleas, Kalmias, and other American shrubs. Beyond these are belts of common Laurels, with miscellaneous strong-growing deciduous trees, shrubs, or Conifers, which, while yielding adequate protection, serve as a kind of frame to a tasteful garden picture. In large gardens the pinetum, when well planted and properly attended, is one of the most important departments, but there are thousands of gardens where such extensive experiments cannot be undertaken, and it is still possible to have within moderate compass a fairly representative collection of the principal coniferous types.

Shallow poor or dry soils are the worst for Conifers generally, and though some can be found to thrive on chalky soils they are not very numerous, especially amongst those of dwarf habit. For moist situations several can be named, but all object to stagnant water in the soil. A well-drained deep rich soil is the best for Conifers of all kinds, and when planting near a house it is advisable to form suitable stations wherever these conditions are not naturally provided. Remove the soil to the depth of 3 or 4 feet and of a width proportionate to the size of plant, refilling with good turfy loam and leaves from which all the woody portions have been taken. This should be trodden rather firmly after the tree is in position and a liberal supply of water afforded. For some Conifers leaf soil is used very freely, and we have seen serious evils result from this, especially where it contained a quantity of woody substances, as fungoid growth is produced that speedily renders the soil sour and the trees unhealthy.

In suitable situations the handsome silvery Abies Engelmanni glauca is one of the most effective of lawn Conifers. Unfortunately, however, it cannot be relied upon except in the south or western counties, as the late frosts in spring are very apt to disfigure if not to kill it Still it possesses such attractions that it is worthy of a trial wherever there is the remotest chance of success; and when it grows freely, forming a well-proportioned specimen 5 or 6 feet high, it is effective in an extraordinary degree, the dense glaucous substance on the leaves and branches glistening like silver under a bright sun. Some confusion has existed respecting this and Abies Parryana glauca, some authorities being of opinion that as they are both from the Rocky Mountains of Colorado and similar in general aspect, they are identical. However this may be in some places it is certain that in others, and more particularly in the northern gardens and nurseries, the Conifer grown as A. Parryana glauca is distinct from A. Engelmanni glauca, and while usually possessing less of the glaucous character is sometimes quite of a bluish tint and is much more hardy. This latter quality has recommended it to many persons who have failed with the other variety, and most of those who have tried it speak favourably respecting its merits. A. Engelmanni glauca should, however, be preferred wherever it can be reasonably expected to succeed.

Another beautiful glaucous Conifer of moderate growth is the Silver Fir, Abies (Picea) nobilis, which should be included in every garden. A good specimen of this Fir is a fine study, as in addition to the prevailing silvery tint there is also a tinge of steely blue in the older leaves that affords a charming harmony. It deserves the best position that can be afforded it, but should not be placed too near the house, as where it succeeds it will attain considerable size if undisturbed. Abies magnifica, A. grandis, and A. Veitchi are all beautiful members of the Picea section. The first two are well known, but the last named, though as yet comparatively scarce, is likely to become a great favourite, owing to its distinct graceful habit. Several others of this group, such as A. amabilis, A. concolor, are scarcely less attractive than those named.

The Hemlock Spruces, Abies canadensis, A. nigra, A. Mertensiana, and A. Hookeriana, though free-growing Conifers, are useful for the dampest positions, more especially the borders of lakes and streams. Capital effects can be produced in such positions with these, Taxodium distichum, Thuia Lobbi, some of the T. occidentalis varieties, and the Virginian Juniper, a few clumps of selected Willows of different colours assisting greatly in rendering this part of a garden or pleasure ground agreeable at all seasons. For large rockeries the dwarf forms of Abies excelsa are well adapted, clanbrasiliana, pumila, and pygmæa constituting a trio of distinct varieties for that purpose.

The Biotas and Thuias are important garden Conifers, both the green and golden varieties being some of the most generally planted. They have an extremely neat appearance, and possess the double advantage of being hardy and easily grown. The Chinese Arbor-Vitæ, Biota orientalis elegantissima, is one of the best both in habit and colour, as it assumes a fine golden tint in the spring and summer, the American Arbor-Vitæ, Thuia occidentalis and its varieties forming fine companions for this. The feathery and varied Retinosporas, especially the golden forms of R. obtusa, R. plumosa, and R. pisifera, are invaluable, as they present a marked contrast with most other Conifers both in habit and colour. Cryptomeria elegans is also a handsome lawn plant, its peculiar purplish tint having an admirable effect in a good situation. The varieties of Cupressus Lawsoniana are almost numberless, and in some avenues of these trees, like that at Keir House, Stirling, all raised from seed, scarcely two are alike, and the difference in some

cases is surprising. A variety called nana is well adapted for lawns, but one of the best is erecta viridis, which is quite a model, so regularly columnar is it in shape, and the shade of green is so bright and distinct that it is at once noticed amongst many others.

Other well marked types are afforded by the Irish Yew, the golden Taxus baccata elegantissima, the bold Thujopsis dolabrata, the Umbrella Pine, Sciadopitys verticillata, and the Maidenhair Tree, Salisburia adiantifolia, which aid in diversifying a collection surprisingly. There are few Pines that look well in a small space, but Pinus contorta, P. Bungeana, P. Cembra, and P. parviflora are amongst those best suited for the purpose.—ARBOR.

THE PEAR SEASON.

THE two outstanding features are the extra fine quality of the fruit and the abnormally early ripening of all the varieties. Only two sorts have this season failed to ripen well here, the one Triomphe de Jodoigne, the other Van Mons Léon Leclerc. It is seldom indeed that the latter is good, and we fully expected this year would have seen it of good quality. The former has been good in the district, on much heavier soil than ours. The best flavoured Pears have been Dr. Hogg, Winter Nélis, and Knight's Monarch. We had no fruit of Seckle this season, and Joséphine de Malines was of deficient quality compared with the two named above. Dr. Hogg is, of course, an early Pear, but a very commendable one. Winter Nelis is so well known that it hardly requires any further word in its favour. It is our favourite variety here ; a pity that it should be so uncertain in its time of ripening. We had a very large quantity this year, and could not keep the latest beyond the last month of 1887, while last year we had it good in April, and it was the new year before it began to ripen. Knight's Monarch is a much firmer fleshed variety, not so juicy, but to some tastes preferable to the above. The fruit lasts for a long time, as only a few ripen together. When growing it requires to be well thinned at an early stage, as the tree very often sets much too large a crop. Of the larger sorts, Williams' Bon Chrêtien, Souvenir du Congrès, Beurré d'Amanlis, Flemish Beauty, Beurré Bachelier, Hacon's Incomparable, Louise Bonne of Jersey, Marie Louise, Easter Beurré, and Beurré Rance gave the most satisfaction.

Williams' Bon Chrêtien on a standard finished a grand crop, which had been thinned very freely. Flavour very musky, and to some palates on that account disagreeable. Wall fruit in comparison was not so good, though larger. Beurré d'Amanlis and Flemish Beauty were both very good, the latter being quite beautifully marked with red on the sunny side. Beurré Bachelier, though wanting in the luscious flavour of the richest kinds, was very pleasing and refreshing, and suited some tastes. It is much in the way of Napoleon, though very much larger. The tree, moreover never fails to bear a crop. Incomparable was one of our best autumn sorts. Louise Bonne off a standard also good. Marie Louise fine as usual, but very quickly past. Easter Beurré is often only fit for kitchen use here, but this season it was really fine, the best of the fruit from a west wall having developed a bright flush on the exposed side, which rendered them of great value for big desserts. The best flavoured fruit, however, was grown on standard trees which carried large crops well thinned out. Towards autumn the branches were borne down by the weight of fruit, and for many weeks these trees formed very pleasing decorative objects.

Beurré Rance is at present in use. Some seasons it fails to ripen, and most often it is March to April before it is fit for table. In other gardens in this neighbourhood it is past, so that we are rather late with it. The fruit has this season developed very highly that peculiar gritty melting flesh for which it is held in repute. Glou Morçeau is not yet quite ripe, and we shall give it the benefit of a little heat to ripen any we may require for home consumption, as this is one of the varieties which is improved considerably by ripening in a warm atmosphere.

Other good Pears of the year were Thompson's, a luscious, but not very large Pear ; Duchesse d'Angoulême ; Olivier des Serres, very fine ; Fondante d'Antomne ; and Crassane, the latter much better than usual. The same remark applies to Nec Plus Meuris, which is still in the fruit room. Pitmaston Duchess was also good. Passe Colmar not so good, and Beurré Diel fine in appearance but bad.

Altogether the Pear season has been one of the very best. It has been, moreover, a good educational season, as it has shown some sorts to be so entirely unsuited, if not altogether worthless, that we can have slight hesitation in removing and replacing them with other and better kinds, and it has further enabled us to decide to allow some kinds which were all but condemned to remain a while longer. But above all the season has shown in a well marked manner that with Pears, as with other things, strict selection is the thing that pays.

The prospect for another season is most glowing. Those who have failed to thin out shoots and weakly spurs in the past should freely thin now. It is not so good a time as when the foliage is on the trees, but it is always a safe and paying practice to cut clean away weakly spurs which never can bear fruit, and which merely produce small foliage of no use to the tree, and certainly of much harm to the stronger and healthier leaves, which would do much better work if the small were out of the way altogether. One perfectly developed bud is worth a hundred of the kind that may be seen in very many gardens throughout the country. The former will come to fruit, the latter never. Nor is it certain that too many good buds are an unmixed good. I thinned a large number of very promising buds out last year, and though the amount of blossom was in consequence apparently deficient, that which was left was of good quality and did not fail to set freely, and I imagine the more freely because of its comparative scarcity.—EAST LOTHIAN.



DENDROBIUMS.

MR. IGGULDEN gives excellent advice on the culture of these beautiful Orchids, but he does not seem quite successful with Dendrobium Falconeri. I would advise him to try it on the stem of Lomaria gibba. If he has one about 1 foot long it would be ample for a fair-sized plant. A strong wire can be pushed through and turned to hang it up by. I have on several occasions seen it very fine treated in this way. Once several years ago I saw a splendid specimen at a Reading Spring Show. It was carrying, if I remember rightly, about 150 of its lovely flowers, and was growing on a Lomaria stem. The plant was, I believe, grown by a doctor, whose man informed me that it made its growth in a small Cucumber house, and was well rested in a vinery till its buds began to show, when it was put back into a warm house till in flower ; treatment which evidently suited it.—C. PAGE.

CYPRIPEDIUM SCHOMBURGKIANUM.

THIS Cypripedium is not a new species, but it is so long since it was first found, and is now so rare, that it is practically as interesting as a fresh discovery. There are many other Orchids that were found by the earlier collectors and have been recorded in botanical works which are now lost to cultivation, and their re-introduction would be as welcome to many as novelties. Cypripedium Schomburgkianum was found by the traveller whose name it bears, Dr Richard Schomburgk, as long ago as 1842, but if any efforts were made to import plants to this country they were unsuccessful and no living plants reached cultivators here. Recently, however, it has been rediscovered, and a large healthy plant with over 100 growths was sold at one of the London auction rooms last week. The highest bid was 21 guineas, and the purchaser was Mr. Measures of Camberwell, who has thus added another treasure to his valuable collection. The growth and foliage resemble C. Pearcei, also known as Cypripedium or Selenipedium caricinum, but I have seen no description of the flowers beyond the fact that they are said to be fragrant.—C.

VANDA TRICOLOR.

I NOTED "W. L.'s" remarks as to the flowering freak of the above, and may mention that one plant flowered strongly twice last season in May and September, continuing in bloom for two months, at the latter period some of the spikes having as many as fifteen blooms on them.—DUM SPIRO SPERO.

HABENARIA MILITARIS.

THAT the terrestrial Orchids from temperate climates are neglected by cultivators has long been apparent, but it was brought to my mind very forcibly when I saw this brightly coloured Habenaria at one of the London sale rooms last year. Only one plant was entered there in flower, and that a small one, but it attracted as much attention as some more valuable and showy Orchids on the same occasion. A good proportion of the orchidists who attended on that day made its acquaintance for the first time, for though known to botanists for some years it is very rare in cultivation. A plant flowered at Mr. B. S. Williams' nursery, Upper Holloway, in the autumn of 1886 for the first time

in that collection, and Mr. Fitch's sketch, then made, appeared in the "Orchid Album" in May 1887 (t. 281) as an accurately coloured and faithful representation of this distinct species. At a meeting of the Royal Horticultural Society on August 13th, last year, Sir Trevor Lawrence, Bart., M.P., Burford Lodge, Dorking, showed a plant in flower, and was awarded a first-class certificate for it. From this specimen the illustration (fig. 3) was prepared.

It seems to have been first made known by Mr. Godefroy-Lebeuf, who found it in the mountains of Phu Quoch in Cochin China, and it was subsequently named Habenaria pusilla, but larger living plants were afterwards brought by M. Regnier, and the specific title militaris was adopted as more appropriate. Like most terrestrial Orchids of this character it has fleshy tuberous roots producing a stem and tapering or elliptical leaves, which fall off after the flowers have decayed—namely, towards the end of October. The flowers are borne on the upper part of the stem in a kind of raceme, the most conspicuous portion being the lip, which is deeply four-lobed with a long spur at the base, large and bright scarlet; the sepals and petals small, greenish white, and inconspicuous. A compost of turfy loam and peat in equal proportions, with plenty of sand, suit it with an intermediate temperature when it is growing, and a cool one when it is resting during the winter.—L. C.

GARDENERS AND LOCAL MUSEUMS.

It is exceedingly desirable that in every well-defined district of our country there should be a museum of natural history objects, more particularly of those that occur in the district. There should also be a register kept of all known species, as specimens cannot be usually exhibited of everyone that occurs, some being rare and exceptional. Such a list would be of service to gardeners, amongst others, as indicating what insects are to be guarded against. In the formation of a local museum gardeners might, if inclined, render considerable help as regards insects and plants. We might add birds also, for most gardeners have special opportunities for observing birds, and can obtain, at times, nests and specimens that are of interest. Insects of all the orders are constantly seen by gardeners. Some of them are mischievous, but many are harmless to cultivated plants, and these are often hastily destroyed, when their preservation would be an advantage to the community if they were placed on view. Gardeners could help each other, and naturalists also, by taking observations as to the species of a district, their times of appearance, abundance or scarcity, when some outline list is constructed in which the principal injurious and beneficial species are embraced. Then as to our native plants. How often one may discover in a garden something generally regarded as a mere weed, but which is an example of some British species, local or unusual, which has arrived there by accident. As yet we fear the names of not a few familiar weeds are unknown to the majority of gardeners, possibly not so much from indifference as want of time.—Naturalist.

THE CULTURE OF MISTLETOE.

In your paper of December 22nd you have a very interesting article on the Mistletoe. At the end of the article the writer wishes to know "why in these days of general depression it cannot be profitably cultivated at home," and intimates that it is worthy of the attention of our agriculturists. I have had a good experience of Mistletoe, and have sold tons of it in this, as well as other seasons. Hundreds of tons are also sent out of this country to the various markets, but it is grown at a direct loss to the growers, as treble the value of Apples might be grown on the trees from which it is cut. A fruit grower is indeed a sloven who allows Mistletoe to accumulate on his trees. Other reasons which add to the unprofitableness of its growth are the excessive charges for carriage and other restrictions made by the railway companies. They charge the very highest rate on their scale, compel you to prepay carriage, and to send entirely at your own risk. They will not carry except on these terms. How heavy these charges press your readers may judge when I state that I have paid over £5 per ton carriage this year for carriage to one market, and to other markets where the carriage is from 50s. to 60s. per ton, plenty of good Mistletoe has been sold wholesale at 6s. per hundredweight, salesmen's commission to come off this. I may state I never saw the Mistletoe better and more berried than this season, and yet make lower prices. No; our agriculturists must look to other sources of profit than growing Mistletoe, but I believe that fruit growing can be made to pay, and enclose you a short paper I read before the Herefordshire Chamber of Agriculture in 1885, in which I state my views on this subject, and after between two and three years of further experience I am more confirmed in this view. The great burden our growers have to carry is the cost of transit by railway to our markets against the cheaper water carriage of our competitors on the other side of the water.—Jno. Watkins, *Pomona Farm, Hereford.*

[The paper referred to contains much sound information.]

PREPARING EARLY POTATOES FOR FORCING.

We dry our seed Potatoes in hampers in an open shed after they are dug, and then store them in a disused ice house with the well filled up. They keep excellently in this position, for the temperature is uniform. The early and second early varieties, for outside planting, are just showing signs of growth. This is a capital time to arrange them singly, eyes upwards, on the vacant



Fig. 3.—Habenaria militaris

shelves in the fruit room. If done at once they can be moved and arranged in much less time than is the case after they have started into growth. If they are allowed to remain in heaps after this date the majority will commence to grow rapidly and weakly, which will necessitate the removal of the sprouts. If plenty of shallow boxes are at hand, they may be arranged in them so that they can be taken direct to the position to be planted when that time arrives. Many store the boxes one above another, and this is certainly preferable to no preparation, and saves time at planting, but where space is not limited this method is not advised. They are as well this way as any for a time, but after they start growth the shoots of all the lower boxes grow rather weakly, even if a cavity between the boxes has been provided. If possible, the boxes should be placed singly, and the position selected not too dark, for we prefer strong green sprits to those that are blanched. There is no comparison between the growth of early Potatoes that have been care-

fully prepared prior to planting and those that have been knocked about and had the first growths rubbed off. The former come through the ground and show a marked difference in strength ; the latter may have more shoots, but they are weaker.—N. G.

GOOD VEGETABLES.

GARDENERS making up their seed lists would do well to give a trial to Veitch's Paragon, and also to their Exhibition Brussels Sprouts. The former was the best of several kinds we had last year, and this season I have grown only the above two sorts, and never have had such a supply. Exhibition is rather the earlier of the two. Paragon has a habit of growth which completely shelters the sprouts from the weather, the foliage rising in successive tiers, and each tier lapped over the other, so that a most complete roof is formed. We plant 3 feet apart each way, and find it pays to do so.

I have never yet had a better Turnip than Snowball. It is good all through the summer, and does not run to seed quickly, while it is one of the very best for winter. I have now grown it for the past four years to supply young Turnips in winter, and it is excellent.

Another good old vegetable is to be found in Lettuce Hicks' Hardy. I have known it for the past twenty years, and have not yet found a more generally good sort. As a rule we get out of it for a few weeks in late spring, but the rest of the year, in summer, autumn, and winter, it keeps us going. In spring or early summer Tom Thumb is very useful, and much better than any new kind we have yet tried. A pinch of seed sown just now under glass, and in a growing temperature, and the plants either placed in boxes or frames, come on very rapidly, some planted in a warm position out of doors keeping up the succession until those raised outdoors come in.

Of Cauliflowers, of which we have now so many good sorts, I doubt if there is a more generally useful summer and early autumn variety than the Dwarf Erfurt. Sown in the same way as recommended for Lettuces it comes in very early, and none stands the drought of summer better than it does.

Perhaps the best paying Tomato is Hackwood Park Prolific. When well grown it is an enormous cropper, grows to a large size, the flavour good, though not the best in that respect, and the colour is very taking.—B.

SEAKALE—GROWING AND FORCING.

THE present season seems to be a suitable time to offer a few remarks upon the cultivation of this useful vegetable. The weather of last week may be taken as a warning of a severe winter, which naturally reminds us of the past two winters, in which nearly all the Broccoli was killed by frost. The question then arises, How are we to keep the table supplied with vegetables if such is the case again? With me the only Broccoli that stood the two winters referred to was Sutton's Late Queen. This is a capital variety, but does not come in till the end of April.

The difficulty is easily overcome where Seakale is considered equal to other vegetables, and in some places it is more of a dainty dish than Cauliflower or Broccoli. I have more than once heard the remark from the lady herself, "I am never tired of Seakale." The plan I practise is to plant a good piece of ground every spring. I do not force it the old-fashioned way on the ground it grows with pots and leaves, which I consider is a waste of labour as well as being unsightly in a well kept garden. I have a dark chamber partitioned off in one part of the stoke-hole, and a brick pit 18 inches deep and 2 feet wide running round against the wall. In a temperature of 65° to 70° both Seakale and Rhubarb forces admirably, and such a place might easily be made in almost any stokehole. Fresh crowns are obtained every four or five days enough to produce three or four dishes. The long roots are cut off, and the crowns are planted thickly in the pit in leaf mould or cocoa-nut fibre, and watered as often as required. The roots are cut up into pieces 2 or 3 inches long and placed in boxes on their ends with some soil, and put into a cool vinery or cold frames until spring, when they have again formed crowns. A piece of ground having been prepared for them they are then planted out a foot apart each way, or if there is plenty of ground 18 inches between the rows and a foot in the row would be better. When they have begun growing freely a dressing of salt and some liquid manure two or three times during the summer will greatly assist them. These lines are not intended for the old and experienced, but for those who are just starting in the gardening world, with but a tender knowledge of some of the things they will be expected to do.—R. M.

CHRISTMAS ROSES.

AN interesting letter on these appeared recently. I do not think they are so much grown in private gardens as they deserve to be. For cut flowers they are first-rate at this season of the year, coming in just as the Chrysanthemums are going off, and if grown under glass they throw their flowers up beautiful and white. Here we grow them in a frame from which frost is excluded by hot-water pipes. They are planted out in good soil and remain undisturbed all the summer, as we think they do best when left alone, taking care to mulch them well and see that they never suffer by want of water. In this way we have them in bloom the week before Christmas, and they continue throwing abundance of flowers for some time. When they become too crowded they will be all lifted and replanted in fresh soil further apart, making a larger plantation. The plan recommended by "B."—viz., dividing them after flowering, is no doubt a good one, but we think they do better planted out than in pots and taken up and replanted when they get too close together.—G. HILTON.



EVENTS OF THE WEEK.—During the current week the chief events of horticultural interest are the continuation of the Mid-Winter Chrysanthemum Show at the Westminster Aquarium to-day (Thursday), and the annual general meeting of the Members of the Gardeners' Royal Benevolent Institution, at 3 P.M., at Simpson's, 101, Strand, to be followed by a dinner in the evening.

—— AT a general meeting of the ROYAL HORTICULTURAL SOCIETY on January 10th, James Bateman, Esq., F.R.S., in the chair, the following candidates were duly elected Fellows of the Society :—viz., Alfred G. Beebe, Richard Bradshaw, R. Giles Bradshaw, Henry Brown, Alexander Cheal, Miss R. Debenham, William S. Dent, T. G. H. Eley, Joseph Harris, H. Herbst, John H. Tite, John Mackerell, Frank R. Parker, Charles H. Smith.

—— A GENERAL meeting of the ROYAL HORTICULTURAL SOCIETY was held in the crush room of the Royal Albert Hall on Tuesday the 10th inst., at twelve noon. Dr. Robert Hogg presided, and the business was confined to reading the minutes of the last special meeting and submitting for confirmation the resolutions passed on that occasion. These were carried unanimously, the only modification being that clause 7 of the circular was adopted with clauses 6 and 8. The appointment of the Committee was also duly confirmed, and a meeting was held subsequently.

—— MR. R. WESTCOTT writes as follows respecting FACTS ABOUT GRAPES :—"Mr. Iggulden, in his Review, page 4, refers to Golden Queen as thus far being disappointing in point of colour. He will find if he gives it, as he intends doing, a longer season, he can get it to colour quite equal to Mrs. Pearson, but, unfortunately, both of them, like Gros Maroc, are more pleasing to the eye than the palate."

—— "DUM SPIRO SPERO," in answer to "Nil Desperandum," states :—"The ARTIFICIAL MANURE referred to on page 539, last vol., is suitable for any plants that require watering either in pots or planted out."

—— THE sudden death is announced of DR. ALEX. DICKSON, Regius Professor of Botany in the University of Edinburgh, at the age of fifty-one. Dr. Dickson was staying at his residence in Peebleshire, and while engaged in the game of curling was seized with illness on the ice, and died on the 30th December last. Before his appointment to the Edinburgh Chair he had successively filled the Chairs of Botany at Dublin and Glasgow, and on the death of Professor Balfour he was appointed his successor in 1879.

—— "G." writes—"For several seasons I have grown READING RUSSET POTATO very satisfactorily, and in 1886 it was especially good ; in the past season, however, the tubers cracked very much, and this has practically spoiled the crop, though the quality is all that could be desired. My land is rather heavy, but I have not noticed this peculiarity in such a marked degree in any other variety this season."

—— MR. JAMES DICKSON sends us the following WEATHER RECORDS from Castlemilk Gardens, Lockerbie, N.B. In 1887 the mean temperature taken from protected and exposed thermometers was 42·6°, the rainfall 30·96 inches, which fell on 160 days. June was the driest month, 0·68 inch falling in five days ; July the wettest, 5·34 inches being registered on eighteen days. The sunshine averaged 120·3 hours

a month, the least amount being 33 hours in January and 238 in June. In 1886 the mean temperature was 45·92°, the rainfall 42.45 inches and falling on 189 days, and sunshine averaged 99·4 hours a month.

—— The Chiswick Gardeners' Mutual Improvement Association.—Mrs. S. A. Lee, F.R.H.S., 4, Arlington Park Villas, Chiswick, has, with the object of encouraging original research and observation, offered a sum of £10 to be distributed in four prizes for essays on horticultural subjects as defined below. The competition is confined to the junior members of the Association, or those under the age of thirty at this date, and who have attended any of the meetings during the current session previous to this date. A member may compete in one only of the two classes. Class I.—Prizes of £3 and £2 to be awarded for the two best essays on any subject relating to horticulture. The writer may choose his own subject, and treat of it from a scientific or practical point of view, or both. Class II.—Prizes of £3 and £2 to be awarded for the two best essays on "Water, its Use and Abuse in the Cultivation of Plants." The manuscripts bearing a motto, or *nom de plume* only, must be sent in to Mr. J. Barry, Secretary, not later than 1st April, 1888. Competent judges will be appointed to adjudicate upon the essays, and the results announced later on by arrangement.

—— Mr. William Jos. Watson, Newcastle-on-Tyne, writes :—"I have to-day (the 9th inst.) received an intimation from the Awards Committee of the Royal Mining, Engineering, and Industrial Exhibition, held in Newcastle last year, that I have been awarded a silver medal for my bed of Conifers and hardy shrubs, and a bronze medal for fernery and cabinet combined."

—— The General Committee meeting of the National Chrysanthemum Society was held at Anderton's Hotel on Thursday, the 5th inst., at 7 P.M., the President, E. Sanderson, Esq., in the chair. There was a large attendance of members, comprising Messrs. W. Holmes (Hon. Sec.), J. R. Starling (Treasurer), R. Ballantine (Vice-President), H. Cannell, G. Stevens, G. Gordon, L. Castle, R. Dean, R. Owen, C. Gibson, J. Kendall, &c. It was decided that the annual meeting should be held in Anderton's Hotel on Tuesday, January 31st, at 7 P.M., and that all the General Committee meetings in the present year be held in the same place. The Hon. Secretary announced that Messrs. Webb and Sons, Stourbridge, had offered their usual special prizes for the next November Show, Messrs. Deverill and Fidler also contributing prizes. Messrs. H. Cannell & Sons, Swanley, offer valuable prizes for their new varieties, and after considerable discussion it was decided that these classes should be judged in the ordinary way. A proposal that a meeting of the Floral Committee should be held on the occasion of the Midwinter Show, January 11th and 12th, at the Royal Aquarium, Westminster. Seventeen new members were then elected and two Fellows, the Winchester Society being affiliated. Mr. Holmes stated that the Lewisham Society owed a considerable sum for subscriptions, which they had been unable to pay, and he was directed to request the return of the medals.

—— Sir Henry Thompson, Hurstside, West Moulsey, exhibited specimens of A Tuber-bearing Stachys at South Kensington last December, but though they were submitted to the Fruit Committee of the Royal Horticultural Society, no opinion was expressed concerning their food value. This plant has been referred to under the name of Stachys affinis, but it has proved on further examination to be distinct from that species, and is now appropriately termed S. tuberifera. It is known in Japan and China, where it is cultivated, and it has also received some attention in France, and is known in the Paris market under the name of "Crosnes." The tubers are small, but produced very abundantly, and contain about 18 per cent. of starch to 74 of water, with a few other matters in small quantities. The tubers are somewhat conical in shape, formed of a succession of rings of a consistency similar to that of the Jerusalem Artichoke. It is said to be hardy, but whether it will be of much value as a vegetable can only be proved by experiments on a larger scale than have yet been attempted here.

—— The Annual General Meeting of the Royal Meteorological Society will be held, by kind permission of the Council of the Institution of Civil Engineers, at 25, Great George Street, Westminster, on Wednesday, the 18th inst., at 8 P.M., when the Report of the Council will be read, the Election of Officers and Council for the ensuing year will take place, and the President (Mr. W. Ellis, F.R.A.S.) will deliver his Address. The above Meeting will be preceded by an Ordinary Meeting, commencing at 7 P.M., at which the following paper will be read :—"The Non-Instrumental Meteorology of England, Wales, and Ireland, 1878-85," By G. M. Whipple, B.Sc., F.R.Met.Soc., F.R.A.S.

—— We do not know what the writer referred to will think of the following note from a leading gardener :—"'Mr. Thinker' *has* had a long holiday. Cannot you persuade him to take up his pen and let your readers have a few more of his observations? I have always considered his notes to represent the essence of the Journal and of horticulture. Of all the paragraphs he has written there was only one with which I could not agree, and that not because I considered him to be wrong, but because I was not sure that I was right."

—— "The Weather in the North," writes "B. D.," "has undergone a complete change during the past week. The frost gave way on the 3rd, since then we have had a good deal of rain and wind. This (9th) is a beautiful spring-like morning; temperature during night 45°. Snowdrops and Crocuses are well above ground."

NOTES ON TOMATOES.

Some useful notes on Tomates were given by "A Kitchen Gardener" on page 566 (last vol.), and a few additional remarks may be interesting and instructing to some readers of the Journal. Like your correspondent, we have had a first-rate crop of Tomatoes last season. They were grown in a span-roofed pit between 40 and 50 feet long, and afforded a sight which I shall not easily forget. The crop referred to was gathered from plants grown in pots (12-inch) and trained to wires about 6 inches from the glass. I can fully endorse all "A Kitchen Gardener" says about growing them in a small quantity of soil. We fill the pots with about three parts of soil, then top-dress when the plants are in full bearing, and towards the end of the season assist them with liquid manure. We take three stems from our plants, and find them do as well and fruit as freely as plants with one stem, and in this way do not require so many plants to fill the house, and less time is occupied in watering in summer, and that is something we have to study in these times. This year I intend to try some of the newer varieties as well as three or four of the good old sorts, such as Vick's Criterion, Hathaway's Excelsior, &c. Our earliest variety will be Sutton's Earliest of All.—G. Hilton, *Smithills Hall.*

GLAZED FLOWER POTS.

I had long noticed that when the soil in a flower pot began to get dry it always cracked away from the pot, and that the only way then was to plunge the pot, as when watering as usual the water runs between the ball of earth and the pot and does not affect the soil. I tried flower pots glazed inside and out, and I found that this did not answer. I then tried painting a pot on the outside, and then I found a wrinkle. I now wanted pots glazed only on the outside, and how was I to get them? The manufacturers would not undertake to make a small quantity, but I got a brickmaker in the neighbourhood to make some and I found the glaze. These pots answered admirably.

Now I found another difficulty: the gardeners thought they would be looked upon at shows as marked pots, and set their faces against them. If this prejudice be laid aside and a trial of the glazed pots made by the Cumnock Pottery Company, I am sure the result would be gratifying. It certainly is better than placing a pot inside a pot. The decrease of trouble is something gardeners ought to rejoice at. I have left pots that under ordinary circumstances would have required watering daily two and three days without ill effects. Caladiums in these pots simply grow to perfection. I have had Albert Edward with leaves 2 feet long by 18 inches broad. Coleuses colour to perfection in them also. In fact, most plants do better than in ordinary pots. I hope these remarks will lead others to try the plan. I daresay other potteries besides the one mentioned would supply the article desired. I have no interest in the above-mentioned pottery company or any other. I only mentioned them as they had supplied me.—Dum Spiro Spero.

EXHIBITING AND JUDGING BOUQUETS.

I have been watching with interest the articles on this subject, and am of the same opinion as Mr. Garner. But referring to individual exhibitors will not serve any good purpose in this discussion. I wrote my first letter giving my ideas as a successful exhibitor of how bouquets should be made and judged, and as I then said I should like to see a dozen or more show in every class. How much more credit there would be for the winner than when just three or four, or at the outside six, show for a good prize. "Learner" seems bound to refer to table decoration, and my carelessness, though hundreds saw the table and were of very different opinion. I have been at several shows since then with success, and possibly I have met "Learner," and with all my carelessness secured the first prize. I am afraid "Learner" will not make a very popular judge if he withholds prizes whenever the table shown is too light for his taste. In regard to the expense, I have been over the list of prizes, and find that twenty-nine first prizes were taken within ten

miles of home, and in many instances with much more simple flowers than were used by other exhibitors, the prizes being double and treble the value of the flowers. The long distance shows I did not gain by, nor could I expect to when travelling 300 miles from home. The size of bouquets is the chief point to be considered. Let that be settled satisfactorily and exhibitors can show what flowers they can obtain. How often we all see good flowers spoiled by bad arrangement, crowded in bouquets and floral decorations. Let the size be the guide and all will be fair.—J. R. CHARD.

IN my letter last week there are two mistakes, partly my own. Instead of "one of my objects," read "my only object," and for "he took no showy Cattleyas" substitute "he took to showing Cattleyas in his bouquets."—A LEARNER.



ROSE NOTES.

NO doubt many of your rosarian readers would, like myself, be glad to see that you had devoted a column specially to Roses, and I shall expect to see something of interest under its tasteful heading every week. Amateur Rose-growers are now very numerous, and there is so much connected with their agreeable hobby worth repeating, that we may hope and expect some of the veterans to assist us younger enthusiasts with hints and advice.

This very mild weather is not encouraging, and the buds of some of my Roses look ready to start, and this they will do quickly if the present temperature continues much longer. Then with the never-failing frosts we shall have some serious damage to buds and shoots. My Roses are not pruned yet beyond what may be termed a little "tidying up" in the way of shortening straggling branches, and they will be left as long as possible before the final cutting in is done to save the back buds.—M., *Surrey*.

ROSES IN WINTER.

I AM at a loss to know how the beautiful Tea Rose buds and blooms that are now somewhat plentiful in the market are produced. I have a good light greenhouse in which they ought to grow, but do not understand how to set about the work for inducing the plants to flower in the winter. I have some good sized ones in pots, but have gathered no buds since November, and scarcely expect to have any for two or three months. Will some gardener who really has Roses in the winter oblige by telling me how he manages his plants?—A SUBURBAN AMATEUR.

THE ROSARIANS' YEAR BOOK.

THE issue of this work for 1888 is just to hand, containing, as usual under the editorship of the Rev. H. Honywood D'Ombrain, much that is useful and interesting. The frontispiece is an excellent portrait of Mr. T. B. Hall, Larchwood, Rockferry, who has been a most successful exhibitor since 1879, having taken no less than "154 first prizes, seventy-six seconds, thirty-nine thirds, and three fourths; eleven gold, six silver, and three bronze medals; and, to crown all, the challenge trophy at Edinburgh." Following some particulars like the above is "A Symposium on Stocks," in five chapters, by Messrs. E. Mawley, D. Gilmour, jun., B. R. Cant, Rev. J. H. Pemberton, and John Burrell. "My Tea House" is contributed by Mr. T. Hall; "Decorative Roses," by Mr. T. W. Girdlestone; "The Rose and the National Rose Society in 1887," by the Editor; "Why I Came South," by Mr. Alexander H. Gray; a tabulated list of prizes won by amateur members of the National Rose Society in 1887, by Rev. F. R. Burnside; "Standard Roses," by Mr. George Paul; "Our Rose Cot at the Children's Hospital," by Mr. D. Gilmour, jun.; and Mr. Mawley's "Weather of the Past Rose Year." The subjects named will give an idea of the variety and interest of the "Year Book" for the present season, and with this note we must leave it now, though hoping to refer to it again in another issue. It is published by Bemrose & Sons, 23, Old Bailey, London, and Derby.

WILLIAM ALLEN RICHARDSON.

CAN this, to my mind the most charming of summer Roses, be made to flower freely under glass at this season of the year, or in early spring? What I mean is, is it suitable for growing under glass or for flowering only in the garden? Admiring some boxes of blooms at a flower show, I have ordered some plants, and do not want to spoil them. I have a span-roofed house, and could have one or two plants in pots, or perhaps plant them out; but is it worth while—that is, would there be a fair chance of success with careful watering, cleanliness, and ventilation?—A LADY GARDENER.

INTRODUCTION OF THE MOSS ROSE.

IN reply to a correspondent, Mr. E. Markham, this old favourite is said to have been introduced or raised in Holland probably at the close of the seventeenth century, for Dr. Martyn in his edition of Miller's "Gardeners' Dictionary" says it is in Furber's catalogue in 1724. We have seen a copy dated 1727; it is entitled "Catalogue of English and Foreign Trees Collected, Increased, and Sold by Robert Furber at his Nursery over against the Park Gate at Kensington, near London." Faulkner in his "History of Fulham" says that Mr. Rench was the first to introduce the Moss Rose into this country, the original plant of which is supposed to have been brought from Holland. Rench lived at South Field Farm, near Parson's Green, a farm possessed by his family for two centuries. He was buried in Fulham churchyard, where there is this inscription to his memory on a headstone—"Under this stone are deposited the remains of Nathaniel Rench, late of this parish, gardener, who departed this life January 18th, 1783, aged 101 years." So he may have introduced the Rose before 1724, for in that year he was forty-two years old. The Moss Rose was first portraited in the "Botanical Magazine," plate 69. It is described as the Rosa muscosa, or Moss Rose, and the plate is dated December, 1788. Mr. Curtis observes that, though Miller thought it a distinct species, Linnæus considered it only a variety of Rosa centifolia.

GRAPES SETTING AND STONING.

I HAVE read repeated contributions by your correspondent, Mr. Stephen Castle, on the above, and before making a note or two on his article on page 536 I would first say that no more amiable correspondent contributes to your pages than Mr. S. Castle. He was known to me over twenty years ago, and it is a pleasure to watch the footsteps of an old friend. I have not devoted such keen attention to Grapes for the last few years that I used to do, still I succeed fairly well. Making a practical observation on Muscat setting, I would say that one of the best sets, if not the best, I ever had was in a house where very little air was given when the Vines were in bloom. Indeed, I have been very chary about letting air or draught suddenly into the house when the Vines are in flower, no matter how mild the weather may be. Of course, when the sun comes out strongly it is impossible to do without ventilation. The application of this practice has a bearing upon the matter similar to Mr. Castle's reduction of front air throughout the season, which means "ventilate but keep out draughts." From the same Muscat Vines above referred to, from liberal or uncareful ventilation, when the weather apparently invited it, I could have found you many a sample of bad setting, such as the shoulder only well set perhaps and all the rest of the bunch very ragged.

I am not particular about keeping my houses dry at flowering time; indeed I would rather see them moist, and syringe them in the afternoons to keep red spider in check. Syringing at that time once a day has never yet caused a failure, whereas by the lack of moisture I have seen many a case where red spider obtained a good footing and remained the rest of the season. The principle of having the ovary well set, using a practical term, holds good as a matter of course in all fruit culture. But many a good set is enfeebled afterwards, and may be so from various causes. For example, Muscats early in the year will not swell the same amount of fruit as later, and will act similar to Melons of different ages on the same plant. After a certain stage some will swell and some will not properly, though there is very little doubt about their being properly set. Again with Peaches I feel certain that after having had a perfect set the embryo fruits nearly all fell from unfavourable circumstances—namely, dry soil at the roots and cold draughts.

The circumstances that with me have produced the finest Black Hamburghs are as little forcing as possible considering the usual practice—so much so that I was in doubt often whether they were not too cold. Of course, this was during summer.—R. M.

IN answer to Mr. S. Castle's question whether the Grapes other than Alicante, and which set without much trouble, have more seeds than the Alicante, I am able to inform him they have, but are rather irregular. We are thinking of fertilising all the bunches this season. What I cannot understand is that such a free setter as the Alicante should give us so much trouble. At the late Birmingham Chrysanthemum Show no one could fail to notice the large berries of the Alicante exhibited by Mr. W. Taylor, whilst others seemed to me deficient in seeds, I mean those exhibited by other growers. Does Mr. S. Castle have the same difficulty with the Black Hamburghs if not artificially fertilised?—A. YOUNG.

ALLOW me to assure "Proprietor" and Mr. Stephen Castle that I readily grant the Vines at West Lynn are treated with more than average skill, and that I fully expect some day to find the produce from them rather too good for my comfort, for such indomitable pluck and enthusiasm as is possessed both by "Proprietor" and his energetic manager is sure to triumph in the end.

But enthusiasts are just the persons who make the greatest blunders. Perhaps I have made more in my time than any other grower. The less enthusiastic are more timid and are satisfied with an ordinary amount of success. What we call a failure might sometimes be classed as a success by persons of less ambition, and when I speak of Vines being starved at West Lynn it must be understood that I speak only in a comparative sense, and that were these same conditions found under a less able manager I should speak and write differently. But "Proprietor" and Mr. S. Castle do not want my flattery, they want to grow Grapes with which to meet myself and other successful growers on the exhibition boards with a fair chance of success. Therefore I shall endeavour to speak plainly.

With reference to my statement that the quantity of caustic lime used was sufficient to destroy everything in the shape of nitrogenous food, and which statement "Proprietor" more than questions, adding facts about lime becoming carbonised, which nobody disputes, I must point out that there are conditions to be taken into consideration in the vinery which do not occur in the laboratory or the corn field. In a well-fed Vine border the greater part of the best roots are very near the surface, and from these surface roots, owing to the action of atmospheric influences, assuming the borders to be inside, it is reasonable to suppose the plants draw their first supplies in the spring. Supposing, then, you apply caustic lime in large quantities, "washing it well in," will not this liberate most of the ammonia near the surface, some of it going off into the air and much of it down at least lower than the surface roots, and these being inactive at the time are helpless? "That such a dressing of lime is rendered perfectly innocuous within three months of application" is altogether wide of the mark, unless the application was made only in the autumn, and it must be remembered that Mr. Castle applies it in autumn, spring, and summer.

"Proprietor" cites the case of a garden within his knowledge on which the application of 14 lbs. of lime to the yard worked immediate and startling results. Quite so, but would a similar application, or indeed any application of lime on the same garden in the following year have had a similar effect? Were the said garden in the hands of "Proprietor," he would have preferred farmyard manure for the second dressing. So, too, in the case quoted from "Vines at Longleat," an unusually heavy dressing of lime was given while the roots were active, but heavy feeding followed, and possibly the lime given then is not yet all exhausted.

"Proprietor" says, "I maintain, therefore, that the 14 lbs. of lime applied by Mr. S. Castle to the Vine borders in February had ceased to be able to exert much, if any, injurious effects on the food which was given to the Vines in May and June." Granted. But the Vines would flower in April, and the roots would only commence action somewhat earlier in the same month, after considerable top growth had been made. It is just at this time when the stored up material in the Vine itself is no longer sufficient for its wants that the question of setting, stoning, and consequently swelling is determined. Anything which interferes then, even for a single day, with the young tender rootlets taking up the needful supplies mars the chances of success. Many failures are caused at this time with too much or too little water, also with strong manure, and of course failure must also ensue if the nitrogen has all been driven off.

In such cases the vigour of the Vines is not decreased, it is often increased in the course of the summer owing to the fact that there are fewer seeds to perfect.—WM. TAYLOR.

I NOTICE a slight printer's error in my last article. I am made to say "the use of gypsum is perfectly safe in any safe quantity," which amounts to saying it is safe when it is safe. I said it is safe in any sane quantity, which is intelligible.—PROPRIETOR.

WIRE FENCES ON FRUIT WALLS.

IN the Journal of August 18th, 1887, a description and illustration appeared of the famous Vine at Manresa House, Roehampton, and it was stated that on another occasion an innovation in growing wall fruits, that might be fairly called the Davisian method, would be referred to as simple, profitable, and economical. The engraving represents a wall 8 feet high, against which Victoria Plum trees were planted four years ago, and the soil being good the trees soon reached the top of the wall. Mr. Davis having practised what is known as the "extension" system of fruit culture for years before it was written about by younger men, did not even restrict the growths when they reached the top of the wall, but trained them in the simple manner represented. It was not, however, an experiment with him, for he had proved the value of the plan as applied to a Pear wall for some years, and which is now in evidence, or was very much so a few months ago, for there were more Pears on the fence on the top than on the side of the wall below.

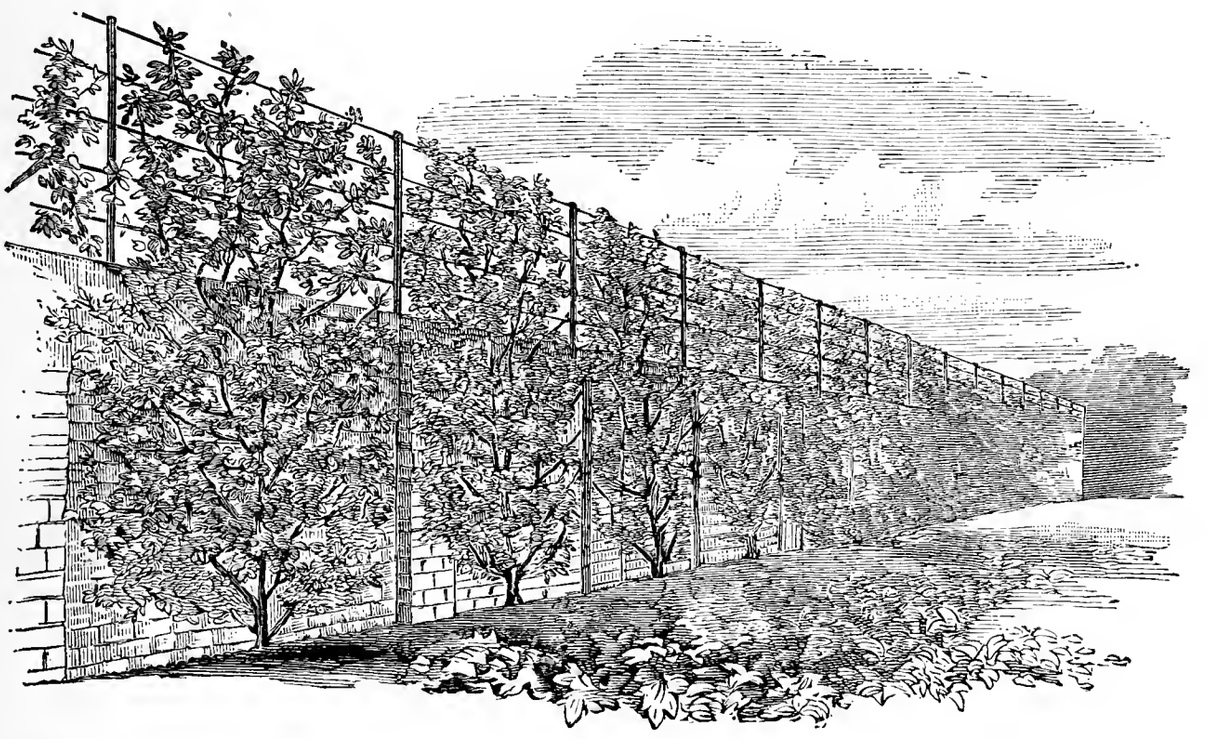


FIG 4.—PLUM WALL AT MANRESA HOUSE.

The plan of increasing the crops from wall trees is simple in the extreme, and the cost trifling in comparison with the profit resulting. As will be seen, ordinary flat iron standards are affixed on the top of the walls and fencing wire stretched along from end to end. Some of the standards are made to grasp the wall, reaching down a foot or so, and there fastened to the masonry, and are about 12 feet apart. The Plum wall is heightened 5 feet, and last year the value of the crop on the trellis probably exceeded that on the 8 feet of wall below, and more than defrayed the cost of the extension, which will last for years.

Mr. Davis is emphatically an utilitarian, and in whatever he does and he does a great deal, he has an eye to profit, the surplus fruit from the garden being sold. On the day of my visit in August he had gathered 400 Peaches, and he had perhaps 200 Melons cut in the fruit room, his crop being 700 from two pits—the varieties Moreton Hall and Hero of Lockinge. His annual sale of fruit of various kinds is about 5 tons.

The Manresa Gardens, though not showy, are worthy of inspection in early August. When the Grapes on the Great Vine are nearly ripe the sight is one to be remembered, and alone worth a considerable journey; the wire-fenced walls and other good work will receive a passing glance; and the bright intelligence and genial character of Mr. Davis enhances the pleasure of a visit to those of kindred tastes with himself.—J. W.

ROYAL HORTICULTURAL SOCIETY.

JANUARY 10TH.

THE Swanley Primulas constituted the principal attraction at this meeting, the Cyclamens from Teddington, the Rhododendrons from Chelsea, with several exhibits of Orchids from amateurs furnishing other interesting groups.

FRUIT COMMITTEE.—Present: Dr. Robert Hogg in the chair, and Messrs W. Marshall, C. Howe, C. Ross, A. H. Pearson, J. Wright, G. T. Miles, G. W. Cummins, J. Cheal, J. Woodbridge, H. J. Veitch, J. Roberts, P. Crowley, T. F. Rivers, John Lee, R. D. Blackmore, P. Barr, Harrison Weir, and G. Norman. A seedling Apple was sent by Messrs. W. Barron and Son, Borrowash, Derby. It is a large, flattish, and rather angular fruit, bearing a general resemblance to Bramley's Seedling; and as it is said by the exhibitors to keep firm till July the Committee expressed a desire to see it again later in the season, as its value will largely depend on its long keeping property. Mr. A. Dean, Bedfont, sent two dishes of Apples for identification, and seemed a little amused subsequently that this could not be satisfactorily accomplished by such a body of "clever" men. They were able, however, to determine that the names attached —Royal Pearmain and Winter Pearmain—were incorrect. The fruit bearing the latter name seemed intermediate in character between Brabant Bellefleur and Striped Beefing, and it was thought to be a variety worth looking after, as its size, firmness, and good colour would be likely to commend it for the market. Messrs. Veitch, Rivers, and Pearson secured specimens for comparison with others in their collections. Fruits of Messrs. Pearson's Newton Wonder, for which a first-class certificate was awarded at the last meeting, were again placed on the table. They appeared to show the parentage of Blenheim Pippin and Dumelow's Seedling; the variety therefore ought to prove worthy of its honour.

Mr. J. Roberts, Charleville Forest, Tullamore, sent two bunches of his seedling Grape, White Gros Colman. They were medium sized, and in shape resembling the typical form, the berries also being like it in shape, but small for Gros Colman; skin thin, flesh juicy, sweet, with a peculiar aroma. Many of the berries were much spotted and soft, and because of its apparent non-keeping properties no award was made for the variety.

Mr. T. Francis Rivers exhibited a dish of the Royal Medlar, also a sample of jelly made from the fruit. The fruit was much approved, and considered to excel the Nottingham Medlar, being larger, and at least equal in quality. It has been grown at Sawbridgeworth for many years. The jelly met with unanimous approval, being firm, rich, with a new and most agreeable flavour, and when known will probably be widely esteemed. Mr. Rivers thinks Medlar growing and jelly making will prove remunerative, as the trees can be grown in hedges, or, indeed, may form attractive and profitable fences. Some years ago he cut down a Thorn hedge, grafted Medlars on the shortened stems, and this hedge now bears abundant and profitable crops of fruit, costing nothing to grow. A first-class certificate was unanimously awarded.

Mr. E. Newton, Sussex House, Hitchin, sent a small dish of Tomatoes, apparently Laxton's open air variety, gathered from plants that fruited early in the season, and now grown "in a house glazed on his new system." It is right to add, however, that Tomato plants have borne continuously for two years long ago. A vote of thanks was awarded for the Tomatoes.

Messrs. Hurst and Son sent specimens of Hearting Kale that did not appear to possess any special merit calling for remark.

FLORAL COMMITTEE.—Present: G. F. Wilson, Esq., F.R.S., in the chair, and Messrs. W. Wilks, H. Bennett, H. Herbst, W. Bates, G. Nicholson, W. Goldring, R. Dean, J. Dominy, H. M. Pollett, C. Noble, H. Ballantine, B. Wynne, J. O'Brien, E. Hill, G. Duffield, and T. Baines.

Messrs. H. Cannell & Sons, Swanley, Kent, were awarded a silver-gilt Banksian medal for one of the best groups of Primulas they have ever staged, comprising 170 excellent plants, well grown, with abundant handsome flowers of some very fine varieties. These were as follows, commencing with the single forms:—Swanley Red, Improvement, and King of the Primulas, all distinct but remarkably rich shades of red, the last named of strong habit and bearing large trusses of flowers. The Queen White with a delicate blush tint, flowers of great size; Emperor, peculiar salmon red large flowers, foliage dark; White Perfection, fern leaf, pure white, massive flowers, dark foliage; Princess Beatrice, compact habit, rosy pink edged with white, very distinct; Swanley Giant, rich purplish crimson, very large and handsome; Cannell's White, pure white, a grand flower, compact habit and light foliage; Princess of Wales, very delicate pink, fringed flowers, light foliage, a charming variety; Swanley White, a well-formed flower, dark foliage, red leaf-stalks; Swanley Purple, an intensely rich crimson purple, dark foliage; Miss Cannell, an extremely large flower of excellent form, white or faintly tinged with pink, dark foliage. The double varieties were Miss Eva Fish (certificated), Marchioness of Exeter, full, white or blush fringed flowers, dark foliage, very free and handsome; Earl of Beaconsfield, rosy red, neat flowers and good truss, free dark foliage; Annie Hillier, delicate pale pink, the buds white; Alba plena and Alba plena fimbriata, both well-known varieties, and King of the Purples, fine purplish crimson, full. A silver-gilt medal was also awarded to Messrs. H. Page & Son, Grove Nursery, Twickenham, for a group of remarkably well-grown Cyclamens in 48-size pots, the colours varying from very dark red to the purest white.

Orchids were not very numerous, but they included several of a rather interesting character, four being honoured with certificates. As a specimen the plant of Cypripedium insigne from A. S. Smith, Esq., Silvermere, Cobham, was the most notable, and the cultural commendation awarded was well deserved. The specimen was over 3 feet in diameter, in vigorous health, and bearing fifty-one large flowers. A. H. Smee, Esq., The Grange, Wallington, Surrey (gardener Mr. G. W. Cummins), sent a plant of Odontoglossum Rossi Smeeana, with white lip and petals and pale sepals, quite distinct from other varieties. Epidendrum polybulbon from the same garden is one of the diminutive Orchids, not exceeding 2 inches in height, the pseudo-bulbs small, with one or two leaves and a single flower each, the narrow sepals and petals brown tipped with yellow, the lip white. Lælia anceps Protheroeana, a rich crimson variety, with the lip unusually dark. F. G. Tautz, Esq., Studley House, Hammersmith (gardener, Mr. J. C. Cowley), showed several hybrid Cypripediums, the best of which, C. Tautzianum, was certificated. C. Marshallianum was worthy of a similar award, it is a hybrid from C. concolor and C. venustum, showing much of the former in the shape of the flower, which is dotted with dark red on a light yellowish ground, the leaves are mottled with light and dark green. C. concinnum is one of the Harrisianum type, and C. pleuroneuron is a curious and rather pretty form, with deep red glossy petals, a pale yellowish lip and a rounded dorsal sepal heavily veined with dark green. R. J. Measures, Esq., Camberwell (gardener, Mr. Simpkins), exhibited a plant of the bold Cypripedium Saltieri, which has large yellowish flowers suggestive of both C. insigne and C. villosum in form, C. apiculatum and C. regale are both of the Harrisianum group, and C. Fostermanni is an introduction from Sylhet, where it is said to be found in a district subject to sharp frosts; it is of the C. insigne character with the lip and petals curiously mottled with yellow and brown (vote of thanks).

Messrs. J. Veitch & Sons, Chelsea, had a group of hybrid Rhododendrons chiefly from the new R. Curtisi, together with a collection of brilliantly tinted flowers of their general stock. The Orchids comprised a hybrid Phalænopsis (certificated) and Cypripedium Galatea, a hybrid of unknown parentage, but something of the C. insigne form. Messrs. Hugh Low & Co., Clapton, sent a plant of Angræcum calligerum with white flowers, the sepals and petals narrow, the lip of similar shape and size, furnished with a white spur 4 inches long.

CERTIFICATED PLANTS.

Oxera pulchella (Mr. F. Ross, Pendell Court Gardens, Bletchingley).—A handsome climbing plant of the natural order Verbenaceæ, and related to the Clerodendrons. It is a native of New Caledonia, where it was found during La Pérouse's voyage. A plant was flowered at Pendell Court in December, 1886, and figured in the "Botanical Magazine" June last year (t. 6938). It has flowered again most freely this year, as the specimen exhibited well indicated. The plant is a strong climber with smooth bright green elliptical opposite leaves, and the flowers are borne in dense pendulous axillary cymes. The corollas are white, broadly funnel-shaped, with two long stamens and a greenish white calyx of four sepals. It requires an intermediate temperature and a rich soil.

Primula sinensis Miss Eva Fish (H. Cannell & Sons).—A double variety with very full large flowers, lilac purple edged with white, a most distinct colour. The foliage is light green and the trusses large.

Cypripedium Tautzianum (F. G. Tautz, Esq.).—A hybrid which originated in the Veitchian collection from a cross between C. niveum and C. barbatum. It is an extremely promising novelty, the colour peculiarly rich and distinct. The flower is neat in form, the lip after the style of C. niveum, white on the under surface, and of a fine rosy crimson tint on the face. The petals are veined and spotted with deep crimson, the lower edge white, the dorsal sepal white veined with crimson.

Laelia anceps Schræderæ (Baron Schröder).—A handsome variety with an intensely rich crimson lip, lighter in the throat and veined with gold, the sepals and petals suffused with a warm crimson hue.

Phalænopsis F. L. Ames (J. Veitch & Sons).—A hybrid between P. amabilis and P. intermedia Portei, with plain green foliage, the flowers white, with a tinge of red in the throat of the lip. Notable for its neat elegant outline, and interesting as an addition to the few hybrid Phalænopses yet raised.

Angræcum Sanderianum (Sanders & Co., St. Albans).—A graceful species of the small flowered section. The plant shown was growing on a small moss-covered raft 8 inches by 3, and had two racemes of about fifteen flowers each, the leaves oval and smooth. The flowers 1¼ inch in diameter, pure white, with ovate petals and lip, the sepals narrow and acute, the pedicels creamy, the spurs long and straight.

Rhododendron Primrose (J. Veitch & Sons).—A single variety with large well-formed clear yellow bell-shaped flowers. A handsome addition to the greenhouse hybrids.

SCIENTIFIC COMMITTEE.—Present:—Mr. F. P. Pascoe, Vice-President, in the chair; Messrs. Boulger, Lynch, Smith, O'Brien, Michael, McLachlan, Ridley, Murray, Scott, Morris, Smee, Wilson, Drs. Masters, Lowe, Profs. Church, Ward, and Hon. Sec. Rev. G. Henslow.

Potato with Cavity.—Mr. McLachlan showed a Potato with a cavity which was caused by a predaceous beetle. The cavity was lined with cork cells.

Aluminum Plants.—Prof. Church alluded to experiments proving that aluminum was very prevalent in plants—*e.g.*, gums and gluten, &c.

Coccus, new sp.—Mr. Morris exhibited a new species discovered on Strobilanthes cuspidatus, growing at Kew.

Clerodendron, n. sp.—He also exhibited a new species remarkable for its climbing hooked petioles.

Monstrous Pears.—Rev. G. Henslow exhibited several varieties, which together seemed to show that a Pear consists partly of swollen axis below the core, and partly of hypertrophied bases of sepals surrounding the core.

Æcidium on Silver Fir.—Mr. Plowright sent specimens and a communication on parasitic fungi on the Fir.

Plants Exhibited.—Mr. Lynch showed several interesting specimens from the Botanical Gardens, Cambridge.

Hybrid Rhododendrons.—Mr. Veitch forwarded five interesting hybrids of the Borneo type.

N.B.—A full report will appear in our next issue.



CHRYSANTHEMUM AMY FURZE.

Unfortunately there is frequently unpleasantness generated, and keen disappointment experienced, through the hasty and imperfect classifying of new varieties—or so-called new varieties—of Chrysanthemums. Amy Furze is an example of the evil of classifying a new variety before possessing adequate knowledge of its true characteristics, and the instance at Liverpool cited by "T. H.," on page 14, is an example of the annoyance that may be experienced by exhibitors of such doubtful varieties. I am not acquainted with the names of the other Judges who have been writing upon the above subject, and I assume "T. H." to be a disinterested person in regard to the exhibit passed over at Liverpool. I, therefore, feel free to reply to him, but I should think it a mistake for any judge or judges to enter into a controversy with a disappointed exhibitor.

The examples of Amy Furze at Liverpool showed their Japanese origin unmistakeably, and inasmuch as it is undoubtedly a Japanese when in its true character—as shown at Liverpool—the judges officiating there had no hesitation in giving the prizes to those stands that contained the best examples and stipulated number of true reflexed flowers. It is quite possible the stand referred to by "T. H." was "the best in the Show," but if that stand contained a Japanese variety—and "T. H." says it contained an Amy Furze, and he says in his opinion Amy Furze is a Japanese variety—the Judges did right in withholding the prize from that stand, and "T. H." himself has given them his support in their action by his own arguments. If "T. H." asks why we did not disqualify that stand, I may reply that the matter was mentioned by one Judge to the other, and he replied, "Oh, it is not necessary, the Liverpool men are shrewd enough to see why it has been passed over."

No such blooms of Amy Furze have been seen in the south, and everyone competent of judging must have known that those at Liverpool were either Japanese or nothing. If compilers of catalogues make a mistake in classifying Chrysanthemums, that is no reason why exhibitors should make a mistake also, and judges follow their example; and if exhibitors would only follow the dictates of their own common sense instead of relying upon the infallibility of the compilers, who, in most cases, are quite as fallible as themselves, they would not so easily make the mistakes they afterwards so bitterly regret.—A Liverpool Judge.

CHALLENGE TROPHIES.

Mr. Bardney in his article on this subject (see page 522) refers to Liverpool as one of the shows at which challenge vases used to be competed for. Will Mr. Bardney kindly explain the date or dates on which these competitions took place? If he can succeed in this, he certainly has the advantage in memory of—A Liverpudlian.

A GOLDEN MRS. HEALE.

Can anyone inform me whether this valuable acquisition is yet in commerce, and if so where it can be obtained? That such a sport is in existence I have good authority for stating. I also hear it was certificated at Bath, although it originated, I believe, in Yorkshire. Surely a yellow sport from the beautiful Mrs. Heale is too precious to be lost sight of.—An Exhibitor.

PLANT NAMES.

[A paper read at a meeting of the "Chiswick Gardeners' Mutual Improvement Association," on December 21st, 1887. By F. W. Burbidge, F.L.S., M.R.I.A., Curator Trin. Col. Botanical Gardens, Dublin; formerly of the R.H.S. Gardens, Chiswick; and also of the Royal Gardens, Kew.]

(*Continued from page 16.*)

Of course, I know that "English names" when misapplied cause great inconvenience, or, as an American humourist once said, "Whenever you see the nurserymen advertising 'Bachelor's Buttons' keep right on sending your money, for no two men's 'Bachelors' Buttons' are alike, so that you are sure of a different plant every time." But this simply comes from a loose application of proper names, and even Latin and Greek nomenclature, and their synonomy when likewise misused result in precisely the same confusion and inconvenience.

The pomologists also have been somewhat afflicted by constantly recurring synonyms. Thus we find Mr. A. J. Downing, in his "Fruit and Fruit Trees of America" (second edition, 1869), writing as follows: "Towards settling this chaos in (fruit) nomenclature the exertions of the Horticultural Society of London have been steadily directed for the last twenty years. That greatest of experimental gardens contains, or has contained, nearly all the varieties of fruit from all (temperate) parts of the world possessing the least celebrity. The vast confusion of names, dozens sometimes meaning the same variety, has been, by careful comparison, reduced to something like order. The relative merits of the kinds have been proved and published. In short, the horticultural world owes this society a heavy debt of gratitude for these labours, and to the science and accuracy of Mr. Robert Thompson, the (then) head of its fruit department, horticulturists here will gladly join me in adding the fullest testimony."

But, as I have said, scientific nomenclature now labours under a heavy income-taxation of synonyms also, and there is an ill-directed tendency to add tertial varietal names in Latin, which should at once be disclaimed. For example, if you write to a nurseryman to-day for a dozen Odontoglossum Alexandræ, or Cattleya Trianæ, or even seeds of Helianthus annuus, you will get them, but no two plants resulting will be quite the same; some varieties will be worthless, others more or less beautiful, but as in the case of "Bachelor's Buttons," no two plants will be alike. Of course, very few cultivated Orchids of note nowadays have less than three names, and if you order Odontoglossum Pescatorei, "Veitch's variety," or Cattleya Trianæ, "Dodgson's variety," then you you may be sure of what you are getting; and, believe me, you will open your eyes when the invoice advises you of the price you will have to pay.

The question of botanical and of popular names then stands thus. The botanist says and writes Viola odorata, and we claim a right to speak of the same plant as the "Sweet Violet." Bellis perennis is our "Daisy," or "Day's Eye," so called from the time of Chaucer, say nearly five hundred years ago. Galanthus nivalis is the Snow Flower of Evelyn (born 1620, died 1706), and the Snowdrop of every English child to-day, and the Orchis mascula of the Warwickshire meadows are no doubt the "Long Purples" of Shakespeare. Speaking of Orchids reminds me that their names are ridiculously confusing, but for the future much trouble will be saved by referring for the genera to the "Genera Plantarum," and for the species Veitch's work now in progress is by far the clearest and best hitherto attempted, and when complete will be that used by all amateurs and gardeners.

I, of course, acknowledge that as at present used loosely, and as registered more or less badly in all dictionaries—the two best ones not always agreeing with each other—there are many popular plant names that do lead to confusion. For example, if I wrote to a nurseryman for plants of (1) the "Crape Myrtle," (2) the "Hedge Lily," (3) the "Tiger Iris," (4) the "Foam Flower," (5) the "Sweet Nancy," or (6) the "Fire Bush," I should not be quite sure of obtaining them simply because there is no full and general registry of such and similar names to which a nurseryman may refer to see what plants I really mean. But if I wrote for (1) Lagerstræmia indica, (2) Convolvulus sepium, (3) Tigridia pavonia, (4) Tiarella cordifolia, (5) Narcissus biflorus, or (6) Embothrium coccineum, I am certain of getting exactly what I desire. This points to the fact that at present botanical names—bad and misleading as some of them are generally acknowledged to be—are nevertheless much better arranged and registered and indexed in books than are the pretty popular names we plead for and admire. Hence it follows that before the dual system of naming I recommend can become a practical reality we must have a second Linnæus, or staunch co-workers like Hooker and Bentham, who will devote time and labour to the drawing up of a complete dictionary of popular names. I see no legitimate reason why we should not originate and organise an "English plant name society," and work out our object under its auspices and regulations. Until this work is done we can never trust to popular names alone; but, as I said before, we must for the time being have Latin or Greek names first, for expediency, and employ popular names so far as we can afterwards, to avoid the pedantic jargon caused by interlarding our ordinary English conversation with long names not altogether "understanded of the people." Of course it is now fully understood that Latin names are to be restricted to wild genera and species, and all mere varieties and garden forms are to be distinguished by English names only, as agreed to generally at the "Narcissus Conference" held on April 1st, 1884.

In conclusion, I shall ask you once more to remember that plants and most other natural objects or crops in the garden are after all more important than their names, and I am sure I need not remind you of the poet's dictum that "names make haste to follow things." It does not so very much matter whether you call a Grape "Black Hamburgh" or "Frankenthaler," but it *does* matter to you as gardeners whether your Grapes are well grown and give pleasure to your employer and to yourself! If your Orchids are unhealthy, and your stove plants disfigured by red spider or thrips, it will not be much to your credit, or to your employer's satisfaction, to know their names and natural orders. Or if your employer happens to be of a practical turn of mind, your love of botany and its nomenclature will be of but slight help, especially if her majesty the cook has told him what he already knows too well—viz., that your Celery is green and stringy, your Potatoes wet and soapy, and your Asparagus or Peas smaller in size and worse in flavour than those he gets with his friends or at his club.

Foreign competition and the quality and cheapness of imported

fruits, vegetables, and even fresh flowers, all bear heavily on the gardening of to-day. You may be called upon to grow for the market as well as for the household supply, and all science, physiology, or nomenclature are nothing unless they make of you better practical men, and this they will assuredly do if you study them diligently and rightly. Above all, I beg of you never to use a word of Latin, or of any other language, if good plain Saxon will serve as well.

Believe me I do not wish you to study names of any kind until you become mere verbal acrobats, proud only of your own or of other's word-jugglery, but I do hope that you may win for yourselves, as British gardeners, the golden spurs of all those "good men and true" who have gone before you.

NATIONAL CHRYSANTHEMUM SOCIETY.

JANUARY 11TH AND 12TH.

THE midwinter Show of this Society was held in the Royal Aquarium, Westminster, on Wednesday and Thursday, and proved exceedingly successful, the exhibits both in quality and quantity far surpassing those at the late shows in previous years. The competition was keen with Chrysanthemums, as many as seven large collections being entered in the first class; there were also six stands of twenty-four blooms, seven of twelve blooms, six of twenty-four Japanese, seven of twelve Japanese, and ten of six Japanese. There were besides several bouquets and miscellaneous entries like the stands of Golden Gem in competition for Mr. W. Owen's prizes, and a stand of the Governor of Guernsey from Mr. T. S. Ware, an exeellent soft yellow late flowered variety. In some of the stands there were really fine blooms, amongst the Japanese especially, the incurved being generally rather small, and in some cases quite out of character where such varieties as Empress of India were shown. Mr. R. Falconer Jameson of Hull had, however, two unusually good blooms of John Salter in his stand of twenty-four blooms, and a few other fair specimens were scattered about. One of the most notable Japanese varieties was D. B. Chapman, of a peculiarly rich purplish crimson colour, with very narrow much curled florets.

Mr. Joseph Lowe, Uxbridge, was awarded first honours for a collection of blooms, and staged eight boxes comprising over 200 blooms. The best were Thunberg, Grandiflorum, Princess Teck, Virginale (Anemone) Elaine, Lowe's Bronze, bronze red, Ethel, and Sarnia. Mr. G. Bolas, gardener to H. Chandos Pole Gell, Esq., Hopton Hall, Wirksworth, was second with six stands of blooms, mostly small, but fresh, and Fleur de Marie, Belle Paule, Cœur Fidèle, and Madame C. Audiguier were the best. R. F. Jameson, Esq., Hessle Hall, was third with fresh blooms.

With twenty-four blooms Mr. Jameson won first honours, showing fresh and good blooms of John Salter already noted, Fleur de Marie, White Christine, Louis Bonamy, Miss Marguerite, Pink Christine, and Lord Alcester. The second prize was awarded to Mr. Sullivan, gardener to D. B. Chapman, Esq., Downshire House, Roehampton, for a neat collection, and Mr. W. Walters, Sunnybank, Burton-on-Trent, was third.

With twelve Japanese blooms Mr. J. Kipling, gardener to Earl Lytton, Knebworth, was first with a very bright stand, Etoile du Midi, Boule d'Or, Golden Gem, Le Centaure, Cry Kang, Thunberg, and Belle Paule being the best. Mr. H. Lister, gardener to Lord Brooke, The Gardens, Easton Lodge, Dunmow, Essex, was second, showing Fanny Boucharlat, Thunberg, Mdlle. Moulise, and Fair Maid of Guernsey, very good. Mr. R. Debenham, St. Peter's, St. Alban's, was third.

Mr. Sullivan secured first honours for twenty-four Japanese blooms, a beautifully fresh collection, including four blooms of the distinct D. B. Chapman, already noted, with good examples of Cercs and Gloriosum. Mr. J. Horsfield, Heytesbury, was second with large blooms of Gloriosum, but the others were rather irregular. Mr. R. Jameson was third. For twelve Japanese Mr. F. Kipling was first; and for six blooms Messrs. W. & G. Drover, Fareham, easily won premier honours with grand blooms of W. G. Drover, Gloriosum, Bicolor, and Mrs. W. Meucke. Mr. Brown, Richmond, was first for a tasteful bouquet.

The Primulas from Swanley and Reading formed an exhibition in themselves, the former being the same as those at South Kensington on the previous day, and are fully noted in the report of that meeting. At the Aquarium they were awarded the prize in the open class for a collection. Messrs. Sutton & Sons had, as usual, a grand group of plants in numerous varieties, representing their well-proved strains, together with a large collection of Cyclamens of great merit. In the miscellaneous classes for Cyclamens, Primulas, and forced plants there was also a capital display, which added greatly to the beauty of the show. A grand group of forced plants from Messrs. H. W. Williams & Son, Fortis Green, Finchley, gained the first prize, Primulas, Tulips, Hyacinths, Azaleas, Solanums, &c., being shown with Ferns and other foliage plants. The same firm was first with thirty-six Tulips. Messrs. Page & Son, Twickenham, had a fine collection of Cyclamens, Mr. May of Twickenham being first in Class 10, followed by Mr. R. Clarke, Twickenham. For twelve Cyclamens Mr. H. Carter, gardener to Alderman Evans, Ewell Grove, Ewell; Mr. W. Kemp, gardener to H. Barry, Esq., Bushill House, Winchmore Hill, and Mr. P. Cornish, gardener to J. Downing, Esq., The Shrubbery, Enfield, was third, all showing healthy well-flowered plants. With a collection of Primulas, Mr. G. Braid, Winchmore Hill, was second to Messrs. Cannell & Son, Swanley, with good samples.

In the amateurs' class for twelve Primulas Mr. A. Carter was first with excellent plants of double varieties. Mr. A. Newell, gardener to Sir E. Saunders, Fairlawn, Wimbledon Common, was second, and Mr. A. Ives, gardener to J. C. Jukes, Esq., Hope House, Winchmore Hill, was third. Well-berried Solanums were shown by Messrs. P. Cornish, W. Kemp, and H. Williams & Son, who gained the chief prizes, the plants being arranged in the centre of a long table between the rows of Chrysanthemum stands. Horticultural sundries and artificial manures were exhibited by Mr. H. G. Smyth, 21, Goldsmith Street, Drury Lane, Mr. B. Field, and Mr. W. Colchester. Mr. W. Holmes, Hackney, contributed a group of foliage plants, chiefly Palms.

Messrs. Sutton & Sons' group comprised 420 plants of Primulas and Cyclamens, and several varieties were certificated, as noted under the Floral Committee. A silver-gilt medal was awarded for the collection.

FLORAL COMMITTEE.—Present: Messrs. E. Sanderson, R. Ballantine, W. Holmes, R. Dean, G. Gordon, L. Castle, C. Gibson, G. Stevens, R. Owen, &c. The Chrysanthemum novelties were not numerous, but first-class certificates were awarded for the following:—W. G. Drover (Messrs. W. & G. Drover), a large Japanese that has been shown several times before and found too coarse, but it was in much better condition this time; and Governor of Guernsey (T. S. Ware), a decorative variety with pale yellow flowers, very free, and naturally late. A primrose sport from Meg Merrilies, shown by Mr. Kipling, was approved by some, but it was desired to be sent again.

The other certificates were awarded for Cyclamens and Primulas—namely, Cyclamen May Queen (May), a variety with large flowers, and hard rounded petals, white, crimson at the base; Cyclamen Queen of Dwarfs (Sutton & Sons), white, free, and dwarf; Cyclamen White Butterfly (Sutton & Sons), of spreading habit, but dwarf, very free and graceful; Primula sinensis Giant Red (Sutton & Sons), very large single variety, with finely formed flowers and light eye; Primula Picotee Edge (Sutton & Sons), neat single white flower, edged pink, very pretty and distinct; Primula Miss Cannell (Cannell & Sons) a large single flower, massive, white and blush tinted, very handsome; and Miss Eva Fish, certificated on the previous day at South Kensington. Sutton's Fern Leaf Scarlet Primula was commended.



FRUIT FORCING.

VINES.—*Early Houses.*—These will now require great care in ventilating, so as not to admit draughts of cold air, which injure the foliage. Disbud and tie the shoots down before they touch the glass. In stopping do not confine to any given number of joints beyond the bunch, but extend it so that an ample and even supply of foliage will be insured, but do not crowd the house with more foliage than can be fully exposed to light. Remove all superfluous bunches, overcropping and overcrowding of the foliage being most adverse to satisfactory results. When the flowers are open maintain a temperature night and day of 70° to 75°, and a rather drier atmosphere, not allowing the fermenting materials to decline at this critical stage, but preserve a good heap of Oak leaves and stable litter in the reserve ground to admit of a supply being obtained as required.

Early-forced Vines in Pots.—As soon as the fruit is set attention should be given to thinning, commencing as soon as the berries are fairly swelling, watering copiously with liquid manure, keeping the evaporation troughs charged with liquid manure and damping available surfaces with the same in the afternoon. Encourage growth above the fruit, yet only as much as can have exposure to light. The soil should be surface-dressed with short manure, and when roots are emitted freely from the "collar" some turves may be placed around the rims extending a couple of inches over the inside of the pots and over them, so as to lie on the fermenting bed of leaves. The temperature should range from 65° to 70° at night, 70° to 75° by day, and 80° to 85° from sun heat, admitting air from 75°, and closing early, so as to raise it to 85° or 90° with sun heat, damping available surfaces at closing time, or early in the afternoon. Syringing the foliage ought not to be practised, as there is always danger of the water leaving a deposit on the berries, which spoils the appearance of otherwise well grown and finished fruit.

Houses Started at the New Year.—The Vines ought to have the inside border thoroughly moistened by repeated waterings or liquid manure at a temperature of 90°. It is more conducive to a speedy and good break than anything short of the employment of fermenting material, which not only affords warmth but gives ammonia-charged vapour highly conducive to rapid vegetation. The outside borders should have a good supply of fermenting material, and if this may not be done owing to the scarcity of material, afford a good supply of dry litter or fern so as to modify in some measure the chilling tendency of cold rains or snow. Sprinkle the Vines frequently, maintain a temperature of 50° to 55° at night, 60° to 65° by day, ventilating freely above 65°. The rods and canes of young Vines should be slung in a horizontal position to secure a regular break.

Houses of Thick-skinned Grapes.—These may now be removed to a dry room, where they will keep quite as well as if left on the Vines, but the bunches with as much wood attached as can be spared, and place the stems in bottles filled with soft water, each containing a few pieces of charcoal. The bottles should be fixed in an inclined position so as to admit of the bunches hanging clear of the sides, and they may

be as far apart as not to allow the bunches to touch each other. Keep the temperature of the room at about 45°, examining the bunches occasionally for decayed berries, which should be carefully removed. The Vines should then be pruned, dressing the cuts with Thomson's styptic or patent knotting, and the house thoroughly cleansed. Air should be admitted freely in favourable weather, seeking to give the Vines as long and complete a rest as possible. Where the borders are not satisfactory lift the roots and relay them in fresh compost, and where the Vines have inside and outside borders the renovation may be accomplished without loss of crop by renewing the former one year and the latter the next.

FIGS.—*Early-forced Trees in Pots.*—The growth being now somewhat advanced the temperature should be increased to 60° at night and 65° by day by artificial means, and 70° to 75° with sun heat, commencing to ventilate at 70°, closing at 75°, and if the temperature rise 5° to 10° it will be an advantage provided it is due to sun heat. Avoid a high temperature by artificial means, as the sturdier and shorter jointed the young shoots can be kept the greater will be the chances of a satisfactory early crop. The trees and house will need to be syringed twice a day, in the morning and again at closing, but avoid a confined saturated atmosphere in dull weather. As the fermenting materials settle firmly about the pots add more fresh leaves, bringing them nearer to the rims of the pots, taking care that the heat about them does not exceed 70° to 75°. Water the trees as required with weak liquid manure, and place some turves about 2 inches thick, grass side downwards, as already advised. These should be watered with weak liquid manure so as to keep them moist, filling the space between the turves and stems of the trees with decayed manure.

Fig Trees to Ripen Fruit in May.—The house containing planted-out trees would be started at the new year, or there should be no further delay. The border being thoroughly watered, repeating so as to insure its thorough moistening, after which the surface may be mulched with short manure about 2 inches thick, placing it rather thicker near the stem so as to encourage the roots to extend. The surfaces of the house and trees will require an occasional syringing, the night temperature being 50°, and 55° from fire heat by day, and from 60° to 65° with sun heat, ventilating freely from that temperature. The mulching should be kept well moistened.

PLANT HOUSES.

Lapagerias.—Most insects that infest plants will attack these useful greenhouse climbers, and if mealy bug establishes itself upon them it is the most difficult of all to eradicate. To do this is not the work of a solitary season, for Lapagerias are the most difficult of all plants to clean. Mealy bug in a small state gets behind the buds on the main stems, which are generally protected with a sheath of dead matter. The plants must be taken down and this removed, and the bug dislodged by the aid of a brush over a tank containing a strong solution of Fir tree oil, lemon oil, or some other equally useful insecticide. After they have been dressed with a brush they should be thoroughly dipped. After they have been trained on the roof, or even before, they should be syringed with petroleum and water, one ounce of the former to a gallon of the latter. This may be practised at intervals of a month, by which means, in time, they will all be destroyed. Where insects do not exist the main work will consist in the regulation of the shoots under the roof where they are grown. Although these are shade-loving plants their shoots should not be crowded thickly together to prevent ripening, or they will not flower satisfactorily. If the border in which they are growing is full of roots top-dress them with decayed manure or give them a good dressing of artificial manure on the surface. Manure is seldom applied to these plants, but after the borders become full of roots they are greatly benefited by such applications.

Passifloras and Tacsonias.—These should be liberally thinned and pruned back at the present time. If too much wood is left in them they become crowded before the close of the growing season. If treated judiciously during the resting period, thinning during the season of growth will not be needed except in solitary cases. After severely pruning them, the house in which they are growing may present a rather bare appearance, but this can be remedied by training a number of the growing shoots to the pillars and wires supporting them until after growth has commenced. If infested with insects strong solutions may be safely used after they are pruned, and this is the only chance of cleaning thoroughly plants of this nature. They cannot be done with any degree of satisfaction during the season of growth without destroying the picturesque appearance they should add to the structure in which they are grown. Top-dress the borders if needed with manure and loam in equal proportions.

Tecomas.—These are not such rapid-growing plants as the preceding, and therefore do not give such labour in keeping them within bounds. All that is needed is slight thinning to prevent overcrowding and the regulation of their shoots. Clean the plants if they need it, and top-dress the border in which they are growing.

Clematis indivisa lobata.—Where the shoots crowd one another weak unripened ones should be removed. Pruning should be deferred until the plant has flowered. Aphides and scale are the worst enemies this plant has to contend against. The former is readily destroyed by slight fumigations, and the latter with the petroleum solution advised for Lapagerias. Top-dress the border if it needs it, but be careful not to give too much water at this season of the year. Where deciduous Clematises are grown indoors prune closely those that flower on young wood, while those that flower from ripened wood should merely have weak ends removed and growths that are likely to crowd the plants.

THE BEE-KEEPER.

PRACTICAL BEE-KEEPING.—No. 27.

A STOCK of bees when in a normal condition will at once destroy a stranger queen; a stock deprived of its queen either by death or the interference of the bee-keeper will show an equal antipathy and dislike to a substituted mother unless special measures are taken to overcome their prejudice. Bees, it is well known, are endowed with a wondrous instinct, and the fact that they should be so utterly unable to comprehend the value of a queen entering the hive after the death or removal of their former sovereign is an emphatic proof of the essential difference between instinct and reason; a queen entering the hive by chance might not unfrequently be the means, and the only means, of saving the stock from destruction, and yet the bees themselves at once destroy her. At certain periods, therefore, when the bees are—either owing to the time of the year when the old queen dies or owing to her sterility for some days before actual death—unable to raise a successor, the death of the queen will, unless the bee-keeper holds out a helping hand, entail the total destruction of the colony. Yet on the other hand instances have been adduced in which stocks, deprived of their queen by her death at a time when there were no eggs in the hive and no larvæ young enough to be used for queen-raising purposes, have made most extraordinary efforts to obtain a successor, and in one case it is asserted that the bees of a queenless stock stole worker eggs from another colony. This, however, is by the way. Enough has been written to show the bee-keeper that when introducing queens he is under the necessity of combating by some means this spirit of hatred to a change of dynasty if he desires to effect his purpose with certainty and without incurring needless risk.

The introduction of queens to stocks which have thrown off swarms, and giving royal cells to stocks, have been already discussed, and it is not to them that we now refer. The general principle upon which the bee-keeper works when introducing queens by means of any of the various kinds of cases available for the purpose is that the queen being thus confined for a certain period in the hive, and yet out of reach of the bees, she gradually loses her peculiar scent and gains confidence, while the bees also become accustomed to her presence and fondle her with their antennæ, thus becoming by degrees friendly, and in the course of some forty-eight hours in the majority of cases willing to receive and welcome her as reigning queen. One of the oldest and most useful cages for the purpose is the ordinary pipe cover cage, which is fastened on to a comb by simply pressing its sides or edges into the cells until the midrib is reached, or at any rate until it is firmly fixed and does not prevent the combs from being brought into their ordinary position. The old queen must in any case be first removed, and all royal cells should be carefully excised; the new queen then being caged on one of the central combs containing a little honey, upon which she may feed when necessary. In thirty hours afterwards the cage may be removed, and unless the bees show signs of attacking her the hive may be closed and the success of the operation is practically assumed. If, however, signs of anger are manifested a confinement lasting about half of the former period will probably induce the most angry stock to lay aside all feelings of anger and distrust, and the desire of the bee-keeper will thus be accomplished.

The other cages are used in a somewhat similar manner, but are in some respects superior. These cages allow the queen to be removed without disturbing or removing any of the combs. The cage, being inserted between two centre combs, is kept in position there until the time—from twenty-four to thirty hours—arises when the queen is to be let loose from her confinement. This is done by merely pressing a wire or flange, as the case may be, which opens a

small door at the bottom of the cage, and allows the queen to enter the hive without further disturbance. Of this description of cage the "Raynor" is perhaps as useful as any. The method of using cages of this description is to first imprison in the selected cage for a period of twelve hours, the queen removed from the stock, then take her away with as little disturbance as possible, by allowing her to come out through the door at the top of the cage—using a little smoke if necessary—next placing the queen, which it is desired to substitute for her, in the cage in her stead, and leaving the stock quiet for another twenty-four hours, when by pressing the wire at the top of the cage the bottom door is opened and the queen descends into the hive, and is generally received and allowed to reign in peace. In every case it is decidedly advantageous to feed gently any stock which is being requeened, taking care that the queen is able to get free access either to the feed-bottle or to the honey in the cells to which her cage is fixed or adjoins.

Mr. Cheshire, however, prefers the "Alley" cage to the "Raynor," and states as his reason one which bears the imprint of sound common sense, and that is that in the "Raynor" cage "the queen has, if surrounded by angry bees, no spot where she can for a moment remain without attempted attack, and although the wire cloth is fine—about fifteen meshes to the inch—no sooner is the foot set down than one of the mob is struggling to seize it, necessitating perpetual movement. Feeding is impossible under the circumstances, to which he attributes his not infrequent losses when he gave the 'Raynor' cage a fair trial now many years ago. With the 'Alley' cage, however excited and unfriendly the stock, the queen on any part of the circumference of the hole is beyond the touch of her enemies, so that she can rest and sip at her candy if she will."

Having no personal experience in the use of the "Alley" cage, it may be as well to follow the example of Mr. Cheshire in his excellent work, and give Mr. Alley's own description of it, which in "Bees and Bee-keeping" is as follows:—"Take a block of wood 3 inches long, 2 inches wide, and half an inch thick, and bore through it a 1¼-inch hole, half-inch from one end. Then cut the slot or mortise from the hole to the end of the cage or block, being careful not to cut out more than enough to allow the bees to pass through after the wire cloth is fastened on. Now cover both sides with fine cloth, cut the tin rest 1½ inch long and three-quarter inch wide, and fasten it to one end of the cage by driving a nail through the centre of it and into the block, which it will hold between the frames."

Sufficient has now been said to explain the methods of introduction by caging. There are, of course, many more kinds of cages, each one differing in some respects from the other, but the "Pipe Cover," "Raynor," and "Alley" cages are fairly representative of their different classes, and are most generally in use. Occasionally it is necessary to cage a queen, and especially a virgin, for twelve, and occasionally for twenty-four or even thirty-six hours longer than under ordinary circumstances. If a great uproar is noticed at the entrance to a stock soon after a queen has been released, there is more than ground for suspicion that the queen is encased and in danger of being killed by the too close, yet not loving embraces, of her rebellious people. The stock should then at once be examined, and the queen recaged for another period. The time is fast approaching, and for all practical purposes has already come, only bee-keepers are at present rather too conservative in their ideas to adopt it and to realise its full value, when bees may successfully be induced to accept a queen introduced by the "Direct Introduction" method; a plan which has the advantage of simplicity, and will in a very short time effect a revolution in the methods of introduction at present practised. In the next paper this method shall be discussed, together with certain means other than caging which are occasionally adopted when circumstances happen to be favourable for their use. I must, however, decline to be dragged into the controversy which has ately been carried on respecting the author of this new method; but must ask those readers who think that the credit lies with a certain individual, and also those who think that another person should have the praise, to leave for the moment such vexed questions, and only endeavour, without apportioning praise or blame to either side, to grasp the main principles upon which it is necessary to work if success is to attend their efforts.—FELIX.

TRADE CATALOGUES RECEIVED.

E. J. Jarman, Chard, Somersetshire.—*Catalogue of Choice New Seeds for the Kitchen and Flower Garden.*

Wm. Paul & Son, Waltham Cross, Herts.—*Catalogues of Seeds and Garden Sundries.*

T. S. Ware, Hale Farm Nurseries, Tottenham.—*Catalogue of New, Rare, and Choice Flower Seeds, Gladioli, Begonias, Gloxinias, &c.*

Little & Ballantyne, Carlisle.—*Seed List, 1888.*

Barr & Son, 12 and 13, King Street, Covent Garden, London.—*Descriptive Spring Catalogue of Choice Seeds for Flower and Kitchen Garden, 1888.*

Arthur Robinson, 8, Leadenhall Street, London, E.C.—*Illustrated Seed Catalogue, 1888.*

J. R. Pearson & Sons, 2, Exchange Row, Nottingham.—*Descriptive List of Garden Seeds, 1888.*

Dobbie & Co, Rothesay, N.B.—*Catalogue of Seeds and Plants, 1888.*

Benjamin Soddy, 243, Walworth Road, London, S.E.—*Spring Catalogue for 1888.*

Charles Sharpe & Co., Sleaford.—*Catalogue of Garden and Farm Seeds, 1888.*

J. Cheal & Sons, Lowfield Nurseries, Crawley, Sussex.—*Catalogue of Vegetable and Flower Seeds, 1888.*

E. P. Dixon & Sons, Hull.—*Catalogue of Garden and Farm Seeds, 1888.*

Thomas Laxton, Bedford.—*List of Flower and Vegetable Seeds, 1888.*

James Dickson & Sons, 108, Eastgate Street, Chester.—*Catalogue of Vegetable and Flower Seeds, Roots, &c.*

Kent & Brydon, Darlington.—*General Seed Catalogue.*

TO CORRESPONDENTS

*** All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Gas Tar in Plant Houses (*Forbes*).—It is injurious to plants whether applied to hot-water pipes, walls, or stages, and you had better not be tempted to try the experiment.

Cement for Pipe Sockets (*S. Oates*).—We have seen pipes jointed with cement with the most satisfactory results. They were fixed twenty years ago, and there has not been a leak nor a crack in one of the joints. Hempen yarn was first placed firmly in, following with cement, but not filling quite flush with the outside.

Rival Chrysanthemum Shows (*A. L. H.*).—Our space this week was filled to overflowing when your letter arrived, and as negotiations may possibly be in progress during the week its insertion in a subsequent issue might be untimely. We trust a decision satisfactory to all parties may be arrived at without further public discussion.

Heating Glass Structures (*Cambridge*).—If you send a plan drawn to scale of the house to be heated, showing also the position of the existing boiler, stating its character, size, and length of pipes attached, indicating also the configuration of the ground between the two houses, we think we shall be able to afford you reliable information. No charge is made for answering questions in this column on any subjects on which information is desired.

Chrysanthemums for Decoration (*H. H. C.*).—The following are suitable for greenhouse decoration, and with good culture make fine specimen plants, bearing good sized blooms when one only is allowed on each stem:—Incurved—Mrs. G. Rundle, Mrs. Dixon, Mr. G. Glenny,

and Lady Hardinge. Japanese—Madame Lacroix, Madame Bertie Rendatler, La Nymphe, and Source d'Or. Reflexed—Dr. Sharpe, Chevalier Domage, Mrs. Forsyth, and King of Crimsons. Plants are grown with from twenty to 100 stems and blooms, according to the skill displayed in their culture. Mr. E. Beckett gives the requisite details in a paper, which will appear in the Journal. He is a very able cultivator of Chrysanthemums.

Rhododendrons (*E. G. O.*).—The dictum that "Rhododendrons will not grow without peat" is the reverse of well founded. We have seen peat carted long distances for these shrubs, and it was afterwards found that some planted in the ordinary soil of the shrubbery borders grew better than those in the peat beds. They will grow in loam that does not contain much lime, and if the subsoil is not dry; but peat, leaf mould, cocoa-nut fibre refuse, and even sawdust, are all good for incorporating with heavy lands for these beautiful evergreen shrubs. Rhododendrons are often injured by digging amongst them ruthlessly, thus destroying the fine fibrous roots that usually form near the surface of the ground. Top-dressings of loam and the ingredients indicated are excellent for Rhododendrons.

Winter Dressing Vines (*F. J.*).—It is a good plan to wash the rods after pruning. The loose bark should be removed, any that comes away readily, but there should be no attempt at scraping. Wash the Vines in the first instance with a softsoap solution, 4 ozs. to the gallon of water, using a brush; then dress with a mixture of softsoap, 4 ozs. to half gallon of water, a like quantity of tobacco juice from the manufacturers, a quarter of a pint of spirits of turpentine, with as much flowers of sulphur added as will form a cream, brushing this well into every angle and crevice, being careful, however, not to injure the buds, and yet dress the Vines in every part. It will destroy every insect that infests Vines, and is good against mildew.

Page's Champion Auricula (*Florist*).—No doubt, as you suggest, we could find something about this variety on consulting "old books." As an example we turn to "Gossip of the Garden," and in a description of Auriculas in 1861 find this paragraph:—"*Page's Champion.*—Londoners are justly proud of their two green edges, this and the Duke of Wellington. Very showy they both are, and this is something better than showy. Still, it is far from perfect—like every other green edged Auricula. Why cannot they be brought as near perfection as the greys or selfs? Fairly circular, never flat in the pip; edge a pure vivid green, lighter than Colonel Taylor or Freedom; colour light reddish violet that commonly darkens as it grows older; paste circular and good; eye circular, of a dark lasting cowslip, with anthers slightly above the surface; excellent trusser; and lasts in bloom as long as any. Foliage good, curly, green."

Artificial Manure for Fruit Trees (*J. F.*).—All the advertised manures are good for fruit trees, as they contain the different food constituents properly blended, and it is impossible to say that one is better than another for any particular soil, and the absence of an analysis of it, and for practical purposes that is not necessary in such cases as yours. Apply the manures according to the instructions accompanying them, giving a little more or less according to the weakness or vigour of the trees. Crushed bones are good, applying about a pint to every square yard, and pointing in lightly. But why not make your own manure? Save the bones of the house, put them in a cask packed in wood ashes. They will dissolve and be a superphosphate, to which you can add an equal quantity of soot, and apply a good handful to every square yard of ground occupied by the roots in early spring, lightly pointing in, and repeat after the fruit is set, not neglecting to give water and to mulch with grass or litter in dry weather.

Applying Fowl Manure (*E. B.*).—Fowl manure being very powerful should not be applied too liberally, about 6 tons per acre being a sufficiently heavy dressing for ground to be cropped with vegetables, and is best applied shortly before the crops are sown or planted. For garden crops we use it at the rate named—viz., 2½ to 3 lbs. per square yard with very satisfactory results. It is applied to the surface evenly and pointed in with a fork lightly. For flowers it is not advisable to give so heavy a dressing, as it sometimes proves too powerful for the delicate and moderate growing kinds, promoting luxuriance of growth not favourable to the production of flowers; therefore we think it best to give a light dressing about February, and again in June to plants that have been planted in autumn or are permanent, in each case pointing it in lightly. For ground intended to be planted with flowers it may be applied just before planting, pointing it in with a fork, following with a light sprinkling between the plants a little before they come into flower, or when they are showing the flower buds, giving at the same time a good watering if the weather be dry. It is assumed the manure is dry and mixed with sand or road grit used. If the manure is unmixed it must be used in lessened proportion. Being rich in ammonia it should not be left on the surface of the soil, as the ammonia will be rapidly evolved and pass away. It should be kept dry, and not placed thickly so as to heat before it is used.

Amaryllis (Sprekelia formosissima) (*R. S.*). — This, the Jacobæa Lily, is very beautiful. Its fine crimson flowers are produced in early summer before the leaves. The plants should be well supplied with water during the period of growth, alternating with liquid manure so as to produce vigorous leaves, keeping the plants in a very light position in order to a thorough solidification of the growth and perfection of the bulbs. When the foliage gives indications of ripening lessened supplies of water should be given, and when the plants are at rest little will be required. They succeed admirably in a compost of good fibrous loam, leaf soil, and sand in equal parts, affording pots twice in diameter that of the bulbs, or if more than one are grown in a pot allow corresponding space, and in potting bury the bulbs in the soil level with the neck. If they have a greenhouse temperature it will be ample, but they will succeed in a light cool stove. They should be potted before they push fresh growths. If you wish to grow the plants outdoors choose a well drained, dry, and warm position near a wall, using good loam, leaf soil, and sand in equal parts, loosening it fully 18 inches deep. Place the bulbs from 6 to 8 inches deep, surround each with sand, and then cover with the compost, pressing it rather firmly about them. The best time to plant is in spring before the flower stems are sent up, when they begin to make roots. During growth in dry weather afford water or liquid manures. They should not be again disturbed for years, they will have established and form splendid masses of blooms in suitable positions.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*T. Tatham*).—The large Apple is Orange Goff, the small one we do not know.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*G. F. B. Spalding*).—Odontoglossum Insleayi. (*W. R. T.*).—1 and 2, Lælia anceps varieties, both good, but the former especially very dark coloured. (*Inquirer*).—1 and 2, Polypodium aureum; 3, Asplenium longissimum; 4, Polystichum aculeatum. (*N. B.*).—1, Primula sinensis alba plena.

COVENT GARDEN MARKET.—JANUARY 11TH.

MARKET quiet, with no alteration.

PLANTS IN POTS.

	s.	d.		s.	d.		s.	d.		s.	d.
Aralia Sieboldi, dozen ..	6	0	to	12	0	Fuchsia, dozen	0	0	to	0	
Arbor vitæ (golden) dozen	6	0		9	0	Hyacinths, dozen	9	0		12	0
„ (common), dozen ..	0	0		0	0	„ (Roman), doz.	9	0		10	0
Azalea, dozen	24	0		42	0	Hydrangea, dozen	0	0		0	0
Begonias, dozen	4	0		9	0	Lilies Valley, dozen ..	18	0		24	0
Chrysanthemums, dozen	9	0		18	0	Lilium lancifolium, doz.	0	0		0	0
Cineraria, dozen	10	0		12	0	„ longiflorum, doz.	0	0		0	0
Cyclamen, dozen	12	0		24	0	Marguerite Daisy, dozen	6	0		12	0
Dracæna terminalis, doz.	30	0		60	0	Mignonette, dozen	0	0		0	0
„ viridis, dozen ..	12	0		24	0	Musk, dozen	0	0		0	0
Epiphyllum, dozen	10	0		18	0	Myrtles, dozen	6	0		12	0
Erica, various, dozen ..	9	0		18	0	Palms, in var., each ..	2	6		21	0
Euonymus, in var., dozen	6	0		18	0	Pelargoniums, dozen ..	0	0		0	0
Evergreens, in var., dozen	6	0		24	0	„ scarlet, doz.	8	0		12	0
Ferns, in variety, dozen	4	0		18	0	Poinsettia, dozen	12	0		15	0
Ficus elastica, each ..	1	6		7	0	Solanum, dozen	9	0		12	0
Foliage Plants, var., each	2	0		10	0	Tulips, dozen pots	6	0		9	0

CUT FLOWERS.

	s.	d.		s.	d.		s.	d.		s.	d.
Abutilons, 12 bunches ..	3	0	to	6	0	Lilies, White, 12 bunches	0	0	to	0	0
Anemones, 12 bunches ..	0	0		0	0	„ Orange, 12 bunches	0	0		0	0
Arum Lilies, 12 blooms ..	5	0		8	0	Lily of the Valley, 12 sprays	0	9		1	6
„ French, bunch ..	0	0		0	0	Margnerites, 12 bunches	2	0		6	0
Asters, 12 bunches	0	0		0	0	Mignonette, 12 bunches	3	0		6	0
Azalea, 12 sprays	1	0		1	6	Narcissi, white (French) 12					
Bouvardias, bunch	0	6		1	0	bunches	6	0		10	0
Camellias, 12 blooms ..	3	0		4	0	Pelargoniums, 12 trusses	1	0		1	6
Carnations, 12 blooms ..	1	0		2	0	„ scarlet, 12 trusses	0	6		0	9
„ 12 bunches ..	0	0		0	0	Poinsettia, 12 blooms ..	6	0		8	0
Christmas Roses or Hellebore, 12 blooms ..	0	6		2	0	Primula (single), bunch ..	0	6		0	0
Chrysanthemums, 12 bchs.	15	0		24	0	„ (double), bunch ..	0	9		1	6
„ 12 blooms	2	0		4	0	Polyanthus, 12 bunches ..	0	0		0	0
Cyclamen, 12 blooms ..	0	6		1	0	Ranunculus, 12 bunches	0	0		0	0
Daisies, 12 bunches ..	2	0		4	0	Roses, 12 bunches	0	0		0	0
Epiphyllum, 12 blooms ..	0	6		0	9	„ (indoor), dozen ..	3	0		4	0
Encharis, dozen	4	0		6	0	„ Tea, dozen	1	6		6	0
Gardenias, 12 blooms ..	9	0		12	0	red, dozen (French)	1	6		3	0
Hyacinths, Roman, 12 sprays ..	0	6		1	0	„ yellow	6	0		9	0
Iris, 12 bunches	0	0		0	0	Stephanotis, 12 sprays ..	0	0		0	0
Lapageria, white, 12 blooms	2	0		3	0	Tropæolum, 12 bunches	2	0		3	0
Lapageria, coloured, 12 blooms	1	0		1	6	Tuberoses, 12 blooms ..	1	0		1	6
Lilium longiflorum, 12 blooms	6	0		9	0	Tulips, dozen blooms ..	0	9		1	6
						Violets, 12 bunches	1	0		1	6
						„ (French), bunch	1	9		2	3
						„ (Parme), bunch	5	0		7	0
						White Lilac, per bunch ..	6	0		7	6

VEGETABLES.

	s.	d.		s.	d.		s.	d.		s.	d.
Artichokes, dozen	1	0	to	2	0	Lettuce, dozen	0	9	to	0	6
Asparagus, bundle	0	0		0	0	Mushrooms, punnet ..	0	6		1	0
Beans, Kidney, per lb. ..	0	3		0	0	Mustard and Cress, punt.	0	2		0	6
Beet, Red, dozen	1	0		2	0	Onions, bunch	0	3		0	0
Broccoli, bundle	0	0		0	0	Parsley, dozen bunches	2	0		3	0
Brussels Sprouts, ½ sieve	3	6		4	0	Parsnips, dozen	1	0		0	0
Cabbage, dozen	1	6		0	0	Potatoes, per cwt.	4	0		5	0
Capsicums, per 100 ..	1	6		2	0	„ Kidney, per cwt.	4	0		0	0
Carrots, bunch	0	4		0	0	Rhubarb, bundle	0	2		0	0
Cauliflowers, dozen ..	3	0		4	0	Salsafy, bundle	1	0		1	6
Celery, bundle	1	6		2	0	Scorzonera, bundle ..	1	6		0	0
Coleworts, doz. bunches	2	0		4	0	Seakale, basket	1	0		1	3
Cucumbers, each	0	4		0	6	Shallots, per lb.	0	3		0	0
Endive, dozen	1	0		2	0	Spinach, bushel	1	6		2	0
Herbs, bunch	0	2		0	0	Tomatoes, per lb.	0	4		0	6
Leeks, bunch	0	3		0	4	Turnips, bunch	0	4		6	0

FRUIT.

	s. d.		s. d.		s. d.		s. d.
Apples, ½ sieve..	1 6	to	3 6	Oranges, per 100	2 0	to	5 0
Nova Scotia and Canada barrel	10 0		18 0	Pears, dozen	1 0		1 6
Cobs, 100 lbs.	55 0		0 0	Pine Apples, English, per lb	0 0		0 0
Grapes, per lb...	1 0		3 0	St. Michael Pines, each	3 0		5 0
Lemons, case	10 0		15 0				



LAMBING TIME.

THE near approach of the lambing season once more leads us to call special attention to certain matters in connection with it to which it is desirable all due care should be given, in order that there may be as little loss as possible either of ewes or lambs. It is our own practice to turn in the tups to the flock about the end of August, so that the lambing season shall begin by the third week in January. We thus secure a fall of early lambs to be sold as lambs early in June, or as hoggets by the end of July. In order to ensure this much care is given to the selection of both ewes and tups, and we have reason for satisfaction with our selection of half-bred Suffolk ewes and pure Hampsbire town tups. The result of this cross is a hardy sturdy progeny of quick growth and early development; but everything possible is done to promote healthy growth, and we begin giving lamb food as soon as the lambs can eat it.

Before entering farther upon the treatment of lambs, let us turn our attention to that of the ewes now. Since Christmas the ewes have been in rather large folds upon a 30-acre pasture held specially in reserve for this season of the year. After the hay-making last July growth was so much retarded by drought that when rain fell autumn was already upon us, and though the grass then grew freely enough it was left untouched for the ewes to have the benefit of for a month previous to and during the lambing. A belt of trees around the pasture affords sufficient shelter; the pasture is well drained and firm, and the herbage abundant. Let it not be thought that because sheep are hardy and bear much exposure with impunity that they are not much benefited by shelter. Pregnant ewes especially should have shelter, be kept quiet, and be carefully fed. We shall give no roots of any kind this season till the lambing actually begins, and then the ewes will have a certain quantity of Mangolds daily. Our dietary since Christmas has been as simple as sound—chopped Barley straw with a few Oats in the troughs, Pea straw in cribs and racks, and the grass. The shepherd has had many a hint from the horsemen that he ought to be having some hay for the ewes, but we answered his request for some that we should probably use no hay for the flock this winter, as we have plenty of Pea and Oat straw, and it is our intention to sell the whole of the hay. We may explain that the horsemen's advice about the use of hay was not altogether disinterested, for they like to be able to get some for the horses to rack up with at night. We, however, insist upon the use of straw chaff, and we know full well how wholesome and nutritious really good straw is. With our large stacks of Barley straw we have no occasion to touch any of the hay, of which we have an ample store of some 250 tons, which a little later on should realise some £900 or £1000, and prove a real help to us in our struggle with difficulties arising from the poverty of the farms which fall upon our hands one after another.

On the day of writing this article we saw two ewe flocks on different farms both folded upon white Turnips. There had previously been a frost of several days' duration, a thaw had set in, and the poor sheep evidently had some difficulty to wade through the sea of mud in which they were apparently kept continuously. We saw this with regret, knowing as we do from dearly-bought experience how severe is the strain upon the ewe's frame as it struggles to withdraw its feet from the sodden soil. A ewe requires from 20 lbs. to 24 lbs. of food daily, and if the bulk of it consists of a mass of half-frozen Turnips day after day, the loss of heat caused by the consumption of such cold watery food proves so injurious, that abortion and the death of the ewes not unfrequently spreads like an epidemic through the flock. No doubt dry food in troughs tends in some measure to counteract the baneful effects of the Turnips, but it cannot prevent mischief. We have both white Turnips and Swedes, but neither will be touched till the lambs are taken upon them with the sheep. If we were short of grass now we should certainly turn to the Rye, which is such a full and forward plant that it would afford excellent grazing for the sheep. We know that many farmers are at their wit's end to find food for the stock this winter, yet there were ample opportunities last autumn for the sowing of green crops, and it certainly shows great want of forethought and care where this was not done. The short crop of hay and roots upon so many farms was like a danger signal for the coming winter, and we took care to keep the number of our sheep well within due bounds, and at the same time did all we could to secure plenty of green crops for spring use. If we should have a late spring the struggle will be a severe one, and it will probably lead to the premature disposal of many a flock.

(To be continued.)

WORK ON THE HOME FARM.

More than ordinary attention has been giving to the rearing and disposal of pigs by us since we ceased keeping bullocks in quantity, and it is one of the matters in which a remarkable improvement has been effected upon all our farms. We have just now a grand lot of what are technically known as "jointers"—*i.e.*, fat hogs about half grown, which realise about £3 a piece at market. A batch of some twenty-eight have been lately consuming three sacks of ground Oats daily, and remarkably well have they thriven upon this food too. Oats are so cheap that we find it answer well to purchase imported Oats to grind into meal for pigs, for, as we have previously explained, a sack of Barley is worth two of Oats and something more, and therefore we certainly cannot afford to grind Barley for pigs. But we were seriously informed that nobody in East Anglia ever heard of fattening pigs upon oatmeal, and we had to insist upon attention being given to our instructions for doing so. Pigs are prolific animals, and every sow should yield at least twenty pigs yearly, so that the two farrows of a sow may always be considered as being worth from £20 to £60. Need we wonder that one of our tenants who keeps thirty or forty sows is now able to pay labourers with "pig money?" Just look at the figures, for they are sufficiently important to be worthy of it. Forty sows should bring 800 pigs yearly, which as jointers at £3 a piece are worth £2400. Surely it will be conceded that there is some profit in this transaction? Yes, we may be told, and some risk too. We grant it, but hold that the risk sinks to a minimum under the exercise of careful management. It by no means answers to breed jointers only; a brisk trade in porkers of 50 lbs. weight is far more profitable if a farm is within fifty or sixty miles of London, but the larger pigs make the best manure, and are often kept on for that purpose. In making calculations of profit and loss a reasonable margin must always be allowed for some failures, but careful selection and management go far to ensure success. It never answers to keep an inferior breed of pigs, nor is it necessary to give fancy prices in order to procure a really useful class of them. Every locality has good pigs if they are only sought for, and with a little care really good animals may be had.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.
Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.: Altitude. 111 feet.

DATE. 1888. January.	9 A.M. Barometer at 32° and Sea Level.	Hygrometer. Dry.	Hygrometer. Wet.	Direction of Wind.	Temp soil at 1 foot.	IN THE DAY. Shade Temperature. Max.	Shade Temperature. Min.	Radiation Temperature In sun.	Radiation Temperature On grass	Rain
	Inches.	deg	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 1	29.714	24 8	21 8	E.		35.2	42.7	23 1	45.0	19.0	0.018
Monday..... 2	29.368	41.8	40.3	S.		35 2	45.4	24.8	51.9	21.7	0.244
Tuesday 3	29 943	33.8	33.4	S.W.		35.1	43.5	31.4	50.2	25.6	—
Wednesday.. 4	29 933	41.7	39 3	S.		35 2	45 3	33.1	50.4	29.2	—
Thursday.... 5	29.705	45.1	44 1	S E.		35 8	49.3	38.6	57.3	33 2	—
Friday 6	30.182	37.4	37.4	S.		36 7	46.8	33 8	50.2	28.4	0 097
Saturday 7	30.290	44 7	44.4	W.		37.8	48.7	37.0	65.4	31.7	—
	29.884	38.5	37.5			35.9	46.0	31.7	52 9	27.0	0.359

REMARKS.

1st.—Fine and bright and very cold, especially in the morning.
2nd.—Dull early; fine bright morning; damp afternoon; rain in the evening and night.
3rd.—Fair morning, except for slight fog, with a little sunshine; dull afternoon.
4th.—Overcast all day.
5th.—Overcast early; fair day with glimpses of sun.
6th.—Cloudy and rather dull, with rain in the evening.
7th.—Fine and pleasant, with occasional sunshine.

Rather sharp frost on the first two days, but on the whole a very average week alike as to pressure, temperature, and rain.—G. J. SYMONS.

PRUNING AND TRAINING PEAR TREES.

IN these days of high pressure and keen competition, when much besides gardening is often expected from the gardener, it is of the greatest importance that the various departments of labour for which he is responsible should be reduced to a system, and also that that system be of the simplest nature possible consistent with remunerative returns. There are few gardens of any extent where it is not found necessary to leave many important operations to subordinates, and sometimes even to labourers of no gardening experience; and what aggravates the evil, these gardens are often expected to compete with those where nothing but skilled labour is employed and gardening exclusively pursued. Under such circumstances a simple method, which may be easily explained, and as easily comprehended by the inexperienced, is imperative, not only for securing the best results, but for diminishing the risk of bad workmanship.

Does it not often occur that much important work is left undone, which of course will tell its own tale, because the head gardener has not time to do it himself, neither has he those about him whom he can trust to do it for him? Disadvantages, however, there always will be more or less in gardens, and it is not these that I wish to make prominent, but only to point them out to show the importance of having easy-to-be-understood rules for the guidance of assistants; not that it is possible to unswervingly follow hard-and-fast lines in gardening, for with the best of rules very much must be left to the discretion of the operator. Much more might be said on this point, but my purpose is rather to give a practical example of the benefits arising from a simple system when applied to the training and pruning of fruit trees, more especially to pyramid, bush, and standard Pear and Apple trees, as these are the forms of trees most frequently treated in a haphazard way.

I am well aware that in most gardens fruit trees of all forms are trained on some system, and beautiful they are in many places, even when void of leaves; but this does not alter the fact that in many gardens, if there be a system, it would defy description, and that the trees would be far more remunerative if left entirely to Nature. What a beautiful object is a well-trained pyramid Pear or Apple tree, either in bloom or laden with fruit; and yet how seldom, except in first-class gardens, do we meet with a fair sample from which one could expect to gather well-flavoured fruit?

Not long since it was my lot to take in hand some so-called pyramid Pear trees. They were pyramids with a vengeance, especially after they were pruned, which had been done for more than ten years every autumn with Box-shears, and consisted in cutting off all summer growths as close to the old spurs as possible, all of which were clustered at the top of the branches, for the inside spurs had died years ago from want of light and air. Now here is a case to the point where every possible chance of fruit was sacrificed to mere shape of tree, and how a gardener could expect to supply his master's table with good fruit whilst pursuing such a system is a problem I could never solve. How these trees were brought into a fruitful condition, and our simple method of keeping them so, may be worth relating, especially as the principle may be applied to all fruit trees that bear their fruit on spurs.

They were allowed their own way until August, by which time they had thrown out a mass of strong shoots from 1 to 2 yards long. As is often the case with pyramids, the main branches had been left much too close, and they had been allowed to branch several times, until they had become a tangled mass of main branches. Our first pruning operation consisted in sawing off about half of the branches close to the main stem, so that those remaining should be from 9 inches to 12 inches apart. We next cut off furcations close to the remaining branches, for we wished to have undivided branches, which with judicious management should be clothed with fruit spurs throughout their length. Cordon training and pruning is simplicity itself, and we aimed at treating each branch as a simple cordon, so that our pyramids should really be compound cordons, and we are well pleased with the result, for each branch being well away from its neighbour the sun and air act equally on their entire length, ripening the spurs and fruit which cluster round them so that they resemble ropes of Onions. It must not be fancied, however, that this desirable condition can be brought about in one season; it will take two or three years of careful treatment both of root and branch. Besides thinning the branches and cutting off all furcations, the current year's side shoots were cut back to about 4 inches if they exceeded 6 inches in length, if not they were left alone. Nothing more was done to them until early in October, when they were carefully root-pruned in the following manner:—

As these trees had been severely pruned and produced little but strong shoots for the past ten years, and as we also had so severely thinned their branches, root pruning was of the greatest importance to bring them into a fruitful condition. They had sent strong wood-producing roots far into the subsoil, so that unless these had been severed the trees would have produced a mass of strong unmanageable shoots. A trench was opened 18 inches wide and 3 feet from the bole of the trees. All fibrous roots, which were very scarce, were carefully preserved, but all strong roots were cut back as close as possible without reducing the ball of earth too much, not merely round the sides, but they were thoroughly undermined, and many of the trees replanted. After thoroughly mixing four wheelbarrows full of fine ballast and two pecks of half-inch bones with the soil which came from each tree it was well rammed back round them. Four inches depth of half-decayed stable manure was then laid on the surface over their roots, and they were securely tied to strong stakes driven into the ground in a slanting direction, so as not to pass through their roots. The leaves flagged very much on some of the trees, but they were supplied with warm water and syringed on dry days, which caused them to stiffen, and with few exceptions they fell off in a natural manner. This operation had the desired effect—viz., preventing wood growth, and clothing the strong shoots made the previous summer with spurs from top to bottom. If the few small shoots along the old branches do not exceed 4 inches in length they are let alone, for being low down they will not develope into strong shoots, but gradually turn into fruit spurs—that is, so long as the main branches be not cut back; but if, as is often the case, they are cut back, what would have been fruit spurs will be converted into wood growth, strong or weak in proportion as the main branches be shortened. The second spring after root pruning the trees formed one of the finest sights I ever saw, for with few exceptions they were covered with flowers nearly the entire length of the branches. They ripened good crops of fruit, but owing to sharp frost and cold winds whilst in flower more than three parts of the flowers never set, which, of course, saved us the trouble of thinning the fruit. The trees have since been lifted and planted in another part of the garden, when it was found that the roots had become a perfect mass of fibres.

The same simple system is adhered to not only with these, but with bush and standard Apples and many other fruit trees—viz., of treating each branch as a simple cordon, allowing them to extend unchecked, which acts as a safety valve by carrying off surplus sap in the right direction. It will be found, however, that if they can be trained into a fruitful state very little dangerous growth will be

made ; but if there be, recourse must be had to careful root-pruning, which will never fail to preserve balance of the trees. Strong, unfruitful growth is the indication for root-pruning, for that proves there are a superabundance of strong wood-forming roots, which if well cut back will be converted into fibrous fruit-spur-forming roots.

To form handsome pyramids it will be necessary to begin with maiden trees, and if for small gardens preference should be given to those grafted on the Quince stock. It should be cut back to within a foot of the ground, which will cause it to break strongly. From four to six of the best placed shoots should be selected to form the future bottom branches, and one for a leader. These should be encouraged to grow as strongly as possible, allowing no furcations on any of them, but let each branch be considered as a simple cordon. It is of the greatest importance to get the bottom branches well advanced before more are started, so that if they have not made good progress the first season they should be allowed another year's growth before more branches are formed ; indeed, this applies to all forms of fruit tree training. If the bottom branches are not thoroughly established when the tree is being formed, especially in trees with undivided stems, they will in after years gradually become weaker and in time die. This arises from the fact that the sap has a strong tendency to fly to the top of the tree ; but if while the tree is being formed it be made to flow into the bottom branches and thoroughly develope them before other branches are formed, the sap will ever after flow through and duly nourish them. Should it be decided not to form new branches the second year the leading shoot must be shortened to within 3 inches of the previous year's cut, and when it breaks in spring select the best placed shoot to form the new leader. Some gardeners cut off about a fourth of the branches, but they will give much less trouble and be clothed with fruit spurs in less time if left alone, for then the sap will find an outlet in lengthening the branches instead of producing a host of shoots along them, which requires very carefully handling, or it will be several years before they give place to fruit spurs. The third year the leading shoot should again be cut back to within 14 inches of the previous year's cut, which will cause it to throw out numerous shoots, from six to eight of which should be selected for another set of branches and a leader, and so on from year to year until the tree be fully developed.

Of course some shoots will be found on the main branches, but they will not be of a strong troublesome kind, all of which if they exceed 4 inches, shou'd be shortened to that length in August, and in winter all should be shortened to 2 inches. The tree being once formed can be easily kept furnished with fruit spurs by the simple method already described, but that, of course, owing to late spring frost, does not always insure a crop of fruit ; but such a tree will always be of interest to a gardener, and generally so to his employers, even if inclement weather does destroy the blossom, because it will be seen that the barrenness is not the fault of cultivation, but of a calamity beyond the cultivator's control.—J. H. W.

HORTICULTURE IN 1887.

I HAVE already taken one look backward in my retrospect of the Rose in the past year (to which, by-the-by, I would refer your correspondent, Mr. Raillem as to my opinion of the new Roses), and now purpose taking a somewhat wider sweep, and looking at the past year in its bearing on our favourite pursuit, as I have been accustomed to do in previous years. I think that when we get to the threescore years and ten we are more concerned with looking forward ; the port seems nearer, while the long stretch of sea behind us seems more and more undefined. Still we must look back if only on this, as on other things, to encourage us to more vigorous efforts for the future.

As far as the weather was concerned it was probably one of the most trying seasons for gardening that we have for some years experienced. The late spring frosts that have been so usual for some years came to us as usual, although we had hoped to have escaped them owing to the long severe weather in the winter ; but notwithstanding all this, we might have "weathered the storm" had it not been for the prolonged drought which was felt all over the country, and which sorely taxed the energies of the gardeners and the constitution of the plants. Week after week went by, and still no water. Happy were they who (like myself) had access to a plentiful supply ; but in many places it was deplorable to witness the havoc wrought by it. Where bedding out was still the main chance the result was deplorable, the plants never seemed to move, and had a miserably stunted appearance. In the vegetable garden Peas were infested with mildew, Lettuces ran off to seed, Turnips were sown over and over again, and yet came to nothing in the end. The small fruits were abundant, but Apples and Pears felt the drought very much. Nor was this all. We had in many parts of the country, and more especially here in Kent, on the last day of August, one of the most destructive gales we have experienced for years—the flowers battered to pieces, and the gardens and orchards were strewn with Apples and Pears. To such an extent was this the case, that in one celebrated fruit garden in our county the gardener told me that where he expected to have gathered 150 bushels of King of the Pippins he should not gather one bushel. We, however, anticipated a fine autumn. In this again we were disappointed. Not only did St. Luke not bring us his "little summer," but we experienced in the second week in October a severe frost that ate up everything, killed off our Dahlias, made our Fig trees shed their leaves, and utterly ruined the bloom of our out-of-door Chrysanthemums. Nowhere, I believe, was a decent bloom cut. To many this entailed a most serious loss. Where blooms are cut for the London market, and plants are grown extensively for that purpose, one grower in the neighbourhood of London growing two acres for that purpose, that frost causing him a loss of close upon £500. On the whole, then, I think that we must look upon the Jubilee year as about one of the worst for gardening that we have had for many years.

The Jubilee year of Her Majesty's reign has made itself felt amongst horticulturists as amongst other people, and Jubilee memorials have been established in many places. The most notable, as far as we are concerned, has been, however, the establishment of the Gardeners' Orphanage Fund originated by Mr. Penny, gardener to H.R.H. the Prince of Wales at Sandringham, and very effectively piloted by Mr. George Deal. Everyone must wish it well, and it is earnestly hoped that it may not interfere with the efficiency of the Royal Gardeners' Benevolent Institution. There is fear of this, for it has been found that the gifts to Jubilee celebrations have interfered with ordinary contributions, and therefore we must hope that in this case Peter may not be robbed to pay Paul.

The year has not been a remarkable one for new plants, whether introduced from abroad or raised in our gardens at home. Of course there have been novelties, for we could not live without them, but nothing very startling. Orchids, which have been the source from which we have had our greatest wonders of late years, do not seem to have supplied us with any startling novelties such as have marked previous years. Orchids have unquestionably not only held their own, but more, and increased in favour with those who have means at their disposal to indulge a somewhat expensive hobby, and which has oftentimes to be carried on with much inconvenience, the heated atmosphere of the East India and other Orchid houses inducing rheumatic twinges to mar the pleasure of the amateur. Every season brings forward some new growers who have joined the band of lovers of this most marvellous genus, while we may with justice say that the two other most popular flowers are the Rose and the Chrysanthemum. Of the former I have already written, and of the latter one can only say that each year seems to add to its already widespread popularity. The number of Chrysanthemum societies has wonderfully increased, and as it is a flower within the reach of all, and one that will accommodate itself to the requirements of "town life," and comes to cheer us in the depth of our dark and dreary winters, we may rejoice in its increased culture. Each year, I think, sees the incurved varieties decreasing and the Japanese increasing in favour ; indeed we are likely to be inundated with a quantity of worthless varieties, one grower, M. S. Délaux, having announced a hundred, while Mr. Cannell and others have been importing from Japan, and others again from America, so that the revision of our lists will be a difficult matter by-and-by. I was going through my own small collection to-day, which does not comprise above 100 varieties of the different classes, and it was an exceedingly difficult matter to say which were to be eliminated. There is, especially in the Japanese, so much variety both of form and colour that it is difficult to discard them ; it must be done, however. The Begonia has advanced in size, but it is questionable whether this enhances its beauty, nor do I think it will ever rank as a popular flower in the sense that it will be grown in collections as Zonal Pelargoniums, Fuchsias, &c., are cultivated. They have been successfully used for bedding out.

The favour with which herbaceous and alpine plants have been

received of late years has in no way diminished during the past year, and although it has been a most trying one in many situations, and we hardly at present can estimate the extent of our losses from the drought, yet great progress has been made. In all directions we find amateurs entering into the new pastures opened out for them, and many have felt how valuable they were during the past dry season, for where many others failed, and the vases would have been empty or nearly so, those who had herbaceous plants to go to could always find something pleasing, and oftentimes novel, while at many exhibitions throughout the country groups of them, and collections of their cut flowers, have attracted a large number of visitors, and encouraged many to begin their culture. It now becomes a question, What is to be considered an herbaceous plant? Do bulbs come under that designation? It seems, for instance, rather out of place to see a large plant of Lilium auratum figuring amongst them as a hardy herbacous plant, but definitions are funny things, and I leave this thorny question for the present.

The depression which has rested on the whole commerce and agriculture of the country has had a very deteriorating effect on many of our large places. The staff of gardeners has been reduced, gardens left in untidiness, and in many instances sale of produce carried on to a considerable extent. I was in one place last summer which used to be a grand show place, and one I had often desired to visit. How woeful was my disappointment! Houses in ruins or pulled down; gardens littery and ill-kept, and everything looked at in a commercial point of view. Nor was this to be wondered at. When the able and intelligent gardener went there twenty years ago he had twenty-three men under him, now he has four! This, I very much fear, is a sample of what is going on around us, and I think no one can regard the process without great regret for what is taking place. These large places formed some of our best schools for gardeners, and it will be a great pity if they should cease to exist. The question as to the equity of proprietors disposing of their surplus produce has been much debated, but personally I do not see why a gentleman should be thought mean if he disposes of surplus Peaches any more than of his surplus Shorthorns or Berkshire pigs. He is not regarded as a butcher if he does the one, why should he be called a market gardener if he does the other?

The death-roll has not been so large this year as in some previous years, nor have those who are gone from us occupied very prominent positions. It is many years since Lord Hawke gave up exhibiting. He used at one time to be the great amateur Hollyhock grower, and his flowers were looked for with anxiety by those who cultivated that stately autumn flower, but when the mysterious disease attacked it he became more engrossed with another favourite flower, the Gladiolus. This he had already cultivated successfully, but the failure of the Hollyhock incited him to a more extended culture, and his flowers were looked for with great interest and a considerable amount of fear by those who were his antagonists. He never undertook anything that he did not carry out with energy and success. Mr. Kinghorn, one of the gentlest and most amiable of men had, from his delicate state of health, been but little seen latterly. He was a man of sound judgment, quiet, but not easily moved from a position he had once taken up. Amongst gardeners Mr. Z. Stevens of Trentham has passed away—and so the world goes on. There is one lesson among many we all have to learn on looking from year to year at the lists of those who have gone from us—viz., how very soon we are forgotten. We fancy sometimes, What a blank when such a one is gone! Just the blank that the sea leaves on the shore when the receding wave lays it bare; but the next wave soon covers it again. And so it is with us all; we must work for love of the work, and fulfil it in our day. Of all idle things, that which is the idlest is to think of what will be said of us when we are gone. We shall be forgotten; and in the emphatic words of the old Book, "the place that knew us shall know us no more." And so my brothers and sisters in the craft, let us work cheerily on, rejoicing in a pursuit so full of calming and restful thought, and look forward (forgive a parson) for the true Garden—the Paradise of God."—D., *Deal.*

CONSIDERATIONS AS TO EARLY AND LATE POTATOES.

Early Potatoes.—Potatoes are of first importance in Ireland as a general crop; but before coming to that it may be well just now to refer to preparatory considerations affecting early varieties. The weather has been singularly mild since Christmas, so much so that there seems some risk of starting into premature growth owing to the atmosphere being almost at saturation point for some weeks. For frame culture this would be no inconvenience, as they might now be placed in at any time with a fair expectation that sufficient sun and light can be had to mature the haulm later on, without which tubers are insipid. The question has often been discussed whether the tubers or "sets" should be cut. Every such query must be decided on its merits. If a number of stalks and a number of small tubers are desired, do not cut; if the reverse, as is customary, divide according to size and number of eyes. There are other reasons for doing so, but at present I pass on.

Those who have a warm southern border with a wall behind may do well, if they want very early Potatoes, to start the "sets" slowly any time now according to requirements, say in shallow boxes of sandy soil, and subsequently lift into the furrows as you would Peas. If the soil is naturally cold and wet this would be time lost as well as the "sets" and vexatious disappointment, as when transplanted growth would cease and the fibrous roots rot. Two capital applications for almost any soil and any variety of early Potatoes are newly slaked lime and rather fresh stable manure. The lime in that state is loose and friable, and kills larvæ, grubs, and the eggs of insects—benefiting the subsequent crop also—while the stable manure, somewhat fresh, warms the soil. If cold and sodden the tender forced rootlets in the early spring are more injured than benefited thereby. In fact, no manure would be more desirable. Now is the time for the amateur and gardener to turn such considerations over in their minds; no writer can do more than mention general principles, particular cases differing in essentials.

As to the best early varieties, the old Ashleaf Kidney (Myatt's, Veitch's, or Rivers') is now run hard in the race for priority and popularity by Carter's First Crop, and by the recently certificated Snowdrop, all kidney shaped. If an early round is desired, after many trials and many years' experience I have found nothing to equal Carter's Eight Weeks, that very nearly will be found to merit its name. If quality is a secondary consideration, Early Rose, Racehorse, or Excelsior should get a preference, as the yield is heavier.

General Crop Potatoes.—Last year's experience of the field crops has been very singular, owing to the persistent and almost continuous drought in the south of Ireland—the north had several inches more rain—growers were speculating on having no Potato crop as late as August. The clay was then actually hot, and after some heavy showers tubers began to form with extraordinary rapidity. Fortunately with me, and I may say the greater part of Ireland, the field Potatoes had formed no tubers up to that time, so there was virtually no "supertubering," a subject of much importance discussed recently by Mr. Laxton, Bedford, who takes much interest in raising new varieties. Another peculiarity of last season, and for which you must go back to 1843, the year (and subsequent ones) of the famine and total blight, there was no Potato disease last year. I must specially draw attention to this matter, as I think it has not been sufficiently noticed, and this observation applies to all varieties sent me for trial by the most noted growers of England and Ireland. Up to the present moment of last year's crop in any part of Ireland I have been in, from Clare to Dublin, from Cork to Wexford, I have not seen a diseased Potato. I say diseased advisedly, as I mean affected with the peronospora blight or "murrain." Of course I have seen a limited number of decayed ones—quite a different matter. Now this disease is a fungus, and moisture is necessary to its propagation, or even existence at a certain period. But there was no moisture and no disease at that period, so I am tempted to ask you and fungologists what they think of the country being finally rid of the Potato disease? I am proceeding on the supposition that the experience of other growers last season and up to the present is like my own and those I have discussed the matter with. The importance of this point, in its bearing as the future prosperity of the country, leaves me only space to refer nominally to certain varieties I grew.

The quality of almost all varieties was good. Of new ones I may name Carter's King of the Russets and Carter's (Bennet's) Surprise, which I find the Royal Horticultural Society also gave first-class certificates to after testing at Chiswick. Sutton's Abundance, Seedling, and Twenty-one, owing to the drought, I am growing this season again. Mr. Laxton sent me ten varieties rather late; all were free from disease, but the best, everything considered, were Reward, Bouncer, and Bedfordshire Hero. Mr. Inglis has a capital Potato in White Fortyfold. Of older varieties I will at present merely name them as I found in the order of their merit—Reading Hero, Cosmopolitan, Beauty of Hebron (second early), Scottish Queen, Imperator, Carter's Freedom (new), Champion, Magnum Bonum (heavy crop), and Vicar of Laleham.—W. J. Murphy, *Clonmel.*

Reading Russet Potato.—We grew Reading Russet Potato for the first time two years ago, and were so pleased with it that we grew it more extensively last year, but the quality was not nearly so good, and the cracking mentioned by "G." was very prevalent; in fact, all our Potatoes cracked a good deal last year, but none so much as Reading Russet. I attributed the cracking to the heavy

rainfall about the middle of August following a long period of drought. Our best Potato is still Schoolmaster, and our "seed" of this variety has been unchanged for eight years. White Elephant is dry and mealy with us, but lacks the flavour of Schoolmaster.—E. B.



DISAS.

The admirable article contributed by "O. T. C." in the Journal on page 3 describing his method of growing the charming Disa grandiflora should be acted upon by those who have previously failed to grow it successfully.

I have seen the magnificent specimens at Chatsworth and Blenheim, and at the last named place there is certain evidence that the plants do suffer from exposure to a few degrees of frost. The plants occupy large pans, and during the summer months they are grown in a frame placed under a north wall. One of the lights happened to have a broken square of glass immediately above one of the Disas, and the unexpected early frost blackened some of the growths, which still show, and will do for some time, the effects of that night. During the months of last April and May several other species of Disa were introduced by Mr. James O'Brien. Some of them came under my charge; and being anxious to succeed in cultivating them, I commenced experimenting with various composts. Too much loam is decidedly harmful, and should only be used sparingly, and that fibrous. As the Disas require abundance of water during growth the potting material shonld be loose, so that water can pass freely through. Anything approaching stagnation is fatal to them. Sand and dung—I used dried cowdung—can also be dispensed with, all that is required being good fibrous peat and live sphagnum in equal quantity, with plenty of crocks broken very small.

After potting the plants soon began to show signs of activity, and during the hot weather were placed outside over a narrow stream in a shady part of the garden. D. cornuta was potted singly in 4-inch pots, and grew very strong, throwing up spikes of bloom 16 inches high. One of these was awarded a botanical certificate in August last by the Floral Committee of the Royal Horticultural Society. D. Herschelli, with grass-like leaves, has made tubers as large as the imported ones, and ought to bloom this year. D. graminiflora and D. spathulata has similar foliage, and have formed large new white tubers. D. sagittalis in habit of growth resembles D. grandiflora, but the flowers are white and mauve. The latest addition is one sent by Mr. O'Brien as a new species, the flowers of which are described like Lælia autumnalis in size and colour, with the habit of D. grandiflora.

Our plants were housed early in September, and have since occupied a shelf in the cool house close to the ventilators, where frost is only just excluded, and since then the soil has gradually been allowed to become dry. I have been examining the tubers, and find them as mentioned and very firm, and a few are commencing to grow again.

LEADEN LABELS FOR ORCHIDS.

Many gardeners have experienced the disadvantages of the ordinary wooden label for recording the names of their Orchids. Often when they have been in use for a year or more the pointed end decays, and is easily broken off and lost. If the lower part is left in the pot it will cause fungus to appear, which soon spreads through the compost and proves hurtful to the plant.

I have adopted for some years a simple and useful mode. By cutting lead strips according to the size of the pot, and having a set of letters and numbers, I punch the first letter of each name with a number underneath. In a register I have the full name and corresponding number, with the name of the person or place from where it was obtained, together with the date, all on one page, and on the opposite or blank page, using the same number, I am able to make any remarks concerning the plant, which would be inconvenient to write on a label even if a durable one. After the impression is made on the lead, which is cut tapering, the pointed end is put inside the pot and bent outwardly over the rim, where it is securely held in position and is practically indestructible. For baskets and blocks a square piece is cut with a hole bored to admit a wire passing through for suspending. They are neat in appearance, and anyone with a fair knowledge of Orchids can generally recognise the species or variety by the letters, which would be difficult sometimes if numbers only were employed. It also enables a grower to keep a correct list of worthless varieties or any that may die.—G. W. C.

FACTS ABOUT GRAPES.

(*Continued from page 5.*)

MRS. PEARSON.

Although of the same parentage as Golden Queen it is totally distinct from it. Golden Queen inherits the strong growth of Ferdinand de Lesseps, but Mrs. Pearson more resembles the Alicante, being less robust and very prolific. It also produces prettier well-shouldered bunches, the berries being round, and if well grown, of a rich amber colour. In common with the Ferdinand de Lesseps and the Strawberry Grape, it has a peculiar sweet musky flavour, and quite a powerful aroma, which can be observed in passing the Vine. Being an excellent keeping Grape, a newly discovered property, Mrs. Pearson may yet become a popular companion for the Alicante and Lady Downe's. It succeeds admirably under the same treatment as these receive, setting quite as freely, and finishing off well without much fire heat. Mr. Goodacre at Elvaston Castle was one of the first to give both this and Golden Queen a good trial, and this season has had Mrs. Pearson exceptionally fine. When well grown, and bottled and stored in a cool dry room, it will keep better than Alicante, and quite as long as the Muscat of Alexandria. It forces fairly well, and if not quite so early as Foster's Seedling or Buckland Sweetwater, is quite as reliable, and decidedly superior in quality.

MUSCAT OF ALEXANDRIA.

Having repeatedly tried, and seen others try to grow this fine Grape in a mixed house of varieties requiring little or no heat to bring them to perfection, I have been obliged, reluctantly enough, to advise others not to plant it unless they can give it a fair amount of heat from first to last. The very finest Muscats, notably those at Longleat, are grown in a compartment, or houses, entirely devoted to them, but very good examples are frequently forthcoming from houses of mixed black and white late varieties, and in all probability Mr. W. Taylor will yet prove that it is possible to have them extra good from a mixed house. In his case the Muscats occupy the sunniest side of a span-roofed house, and consequently get much more light and sunshine than do the black varieties on the cooler side. All cannot imitate this practice, but as there is usually a warm end to most vineries, it is here where the Muscats ought to be planted. A careful use of the ventilators may further serve to keep the Muscat end warmer than the rest of the house, and well-finished Grapes be the result. Although a high temperature at flowering time may be safe, and even beneficial, in a large house, it is by no means necessary or advisable in small vineries. Plenty of pollen may be distributed, and yet a good set not effected, owing to the weakly character of the flowers. An extra high temperature has a weakening effect, and is positively injurious to Vines not in robust health. Avoid crowding the laterals so as to admit plenty of light to the bunches, and this strengthens them, and largely contributes to both a good set and finish. When at Gunnersbury House in October, Mr. Hudson drew my attention to the superiority of the bunches of Muscat of Alexandria in a house where a rather low temperature was maintained at flowering time. In one house the temperature was kept 70° and upwards night and day, but the result was not nearly so good as in the next division, where the night temperature ranged from 60° to 65°. Without a great expenditure of fire heat Mr. Hudson obtained capital Muscats which promised to keep well. In our case the temperature of the Muscat house cannot be kept much above 60° in the night time, and a good set is the rule.

Speaking from experience, having made plenty of blunders, I am of opinion that there are two primary causes for so many failures with this Grape—viz., overcropping and crowding. Naturally it is of free growth and very prolific, young well-ripened canes being almost certain to develope numerous extra large bunches. Six bunches are frequently left where three or four would be ample, and the consequence is a serious check from which the Vines rarely recover. Neither the young nor newly renovated Vines ought to be heavily cropped, nothing being gained by it, but on the contrary loss results. Every strong rod should have a roof space of nearly or quite 4 feet, whereas there are plenty of vineries I could mention where they are disposed more near 2 feet apart. Given good room the bunches are thick and well-set; crowded, nothing but spindly thinly berried bunches can possibly be obtained, these presenting a very poor appearance either on the Vines or the dessert dishes. I prefer to have the Muscat of Alexandria on its own roots, but find it makes a capital stock for any other variety worked on it.—W. Iggulden.

"STONELEIGH," BARKBY, NEAR LEICESTER.

When spending a day or two of the Christmas holidays with friends near Leicester, and having previously heard from various sources of the exceptionally fine Chrysanthemums which have this season been grown at the above address, I took advantage of the opportunity afforded me to call and see what remained of them at so late a date as Christmas week, feeling sure that if the proprietor, W. Billson, Esq., was as much an enthusiastic lover and grower of the flower as I had been told he was, I should be quite certain of a genial welcome, and in this I was not at all mistaken. I was fortunate in finding Mr. Billson at home in more senses than one, as I found him in his garden busily employed along with his gardeners in cutting down and clearing away those of his favourites of which the flowers were quite gone. The gardener, Mr. Bolton, is a quiet, unassuming, but skilful and painstaking young man, who has already made his name known at both the summer and autumn shows of the district, and is likely to make it much more widely known in other towns and districts in future seasons. Mr. Billson himself is evidently a true gardener at heart, with a love for the work, but being closely engaged at all except holiday times as the head of a business firm, he has little opportunity for indulging in his favourite occupation.

The first object of interest to me being the Chrysanthemums, I was conducted through the several houses which they have occupied during the flowering season, and although by far the greater portion had been cut down and cleared away prior to my visit, there was still a sufficient number left to prove how fine had been the collection when at its best. The total number which had been grown during the past season was slightly over 700 as standards for exhibition blooms. Some very fine blooms were still left of such late varieties as Hero of Stoke Newington, Princess Teck, &c., with the remains of what had once been grand flowers of Queens and Empresses (I was told that they had had Golden Empress measuring 17 inches over the bloom). The plants were all robust, with stems like walking sticks and large leathery foliage. I asked if any cutting back or topping had been practised, and was told not, but that the treatment adopted in this respect had been that recommended by Mr. Molyneux, except that the varieties Eve and Mabel Ward had been allowed to grow unstopped until the first bud was produced, which was destroyed, and the three breaks formed immediately below this being then taken on for producing crown buds. From the two varieties above named I was told very good flowers had been obtained by cutting back to produce early breaks. Although allowed to grow thus freely and unchecked abundance of good early flowers were obtained, and at the Leicester Chrysanthemum Society's Show, held so early as the 4th and 5th November, nearly all the first prizes offered in the open classes were awarded to flowers from this collection. Again at Loughborough they were equally successful, and also again much later at Leeds. It had been Mr. Billson's intention to compete at the Sheffield and West Riding Chrysanthemum Society's Show for the large silver cup and money prizes given for forty-eight blooms, and his entry was duly made, but unfortunately his gardener was prevented by illness on the day of the Show from competing.

Early propagation appears not to be practised. At the time of my visit only a portion of the stock had been taken, and those very recently, and as the system adopted is that of putting about four cuttings in each pot (60's) and plunging the pots in cocoa-nut fibre placed openly on the side stages in a cold vinery, the free ventilation of which causes the cuttings to flag seriously, it is likely it will be a considerable time yet before any have formed roots. Mr. Bolton, however, attributes a large amount of his success with them to the fact that when they commence growing freely in the early spring they are pushed along very rapidly and yet sturdily in a very fine range of lean-to pits or frames running along and attached to the south-east side of a range of span-roofed houses. Frost and damp are kept out of these pits by wooden slides let into the walls, separating them from the houses, which can be opened or closed at pleasure. The floor of the pits is also sunk considerably below the ground level, and the plants are so arranged as that their heads are always near the glass, sinking the pots lower as they grow, and giving always free ventilation, thus securing a strong and sturdy growth in the early stages of the plant's existence, a point undoubtedly of great importance to ultimate success. A few of the varieties which have been exceptionally fine, as described to me by Mr. Billson and his gardener, are Golden Empress, Comte de Germiny (each of these I was told had measured 17 inches over), Lord Alcester, John Salter, Mr. Bunn, Jeanne d'Arc, Hero of Stoke Newington, Criterion, Baronne de Prailly Boule d'Or, Belle Paule, Madame C. Audiguier, and Meg Merrilies.

Chrysanthemums are far from being the only plants well grown. the culture of Tea Roses in pots being also a specialty; but as I have dwelt at length upon the former subject not much can now be said concerning others. I found, however, that one large span-roofed house which had been filled with Chrysanthemums during their season had recently been entirely cleared and cleaned out, and was then full of large, strong, and healthy bunches of "Teas" in pots, just breaking freely into growth, and from which a fine crop of bloom may be expected in about two months hence. I was told by the gardener that thirty dozen flowers per week were cut last season for a considerable time from the first week in March onwards. In another large span-roofed plant stove were some very good specimen foliage and flowering plants which have already made their mark at the Leicester Abbey Park summer shows. Amongst them I noticed handsome specimens of Bougainvilleas, Allamandas, Stephanotis, Crotons, Anthurium Veitchi (twelve fine leaves), A. Sanderianum (a fine piece), and Dracæna Lindeni, 4 feet high, finely coloured; also a number of very large specimen Adiantums, the best being farleyense, Mooreanum, gracillimum, and cardiochlænum.

In a conservatory adjoining the residence I noticed well-grown Primulas, also Camellias, Azaleas, &c. The kitchen garden is extensive, and is well stocked with healthy fruit trees, also some fine Hybrid Perpetual Roses. The house is a very commodious and substantially built red brick structure, commanding some beautiful and pleasant views along the Valley of the Soar, and is about four miles from Leicester.—W. K. W.



Events of the Week.—There are few strictly horticultural events of importance this week beyond the usual auction sales. The scientific societies' meetings are now frequent; the Royal Society has a meeting on Thursday, 19th inst., at 4.30 P.M., and the Linnean Society on the same day at 8 P.M. On Wednesday, 25th inst., at 8 P.M. the Society of Arts also has a meeting.

—— The Royal Horticultural Society.—As already stated, the annual meeting of this Society will be held on February 14th next, the following being the names of Fellows nominated for the Council:—Sir Trevor Lawrence, Bart, M.P., Robert Hogg, L.L.D., F.L.S., Professor M. Foster, F.R.S., D. Morris, M.A., F.L.S., W. T. Thiselton Dyer, C.M.G. F.R.S., A. H. Smee, William Lee, Col. Beddome, George Paul, Harry J. Veitch, Sydney Courtauld, E. G. Loder, Rev. W. Wilks, Baron Henry Schröder, and G. F. Wilson, F.R.S. Messrs. Morris, Smee, Paul, Veitch and Wilkes will take the places of Major Mason, Mr. W. Haughton, Hon. and Rev. J. T. Boscawen, Col. Trevor Clarke, and G. Maw. As officers the Council recommend the following:—President, Sir Trevor Lawrence, Bart, M.P.; Treasurer, D. Morris; Secretary, W. Lee; and Auditors, Messrs. John Lee, Wm. Richards, and H. Turner.

—— A few packets of the manure spoken of by "Dum Spiro Spero," on page 559 of our last volume, have been received at this office, and will be sent to applicants in the order of their applications on receipt of 3d. in postage stamps to pay for postage.

—— We have received Mr. Shirley Hibberd's Garden Oracle, which has attained its thirtieth anniversary. Its appearance is no doubt well known to all gardening readers, and when we say that the present issue is in no way inferior to its predecessors we need say no more.

—— A Cactophile writes:—"It may interest some of your readers to know that a Cacti Society has been instituted on the Continent. It is entitled the Vetplantenkring, and the meetings are to be held once a month at the Tivoli Rue du Pelican 82, Antwerp, the Secretary being M. J. Havermans, Rue Jesus 46, Antwerp."

—— We learn from the *American Gardeners' Monthly* for the current month just to hand that Mr. Charles H. Marot, well known as the publisher and proprietor of that periodical, and of numerous gardening works, died on December 21st last in Philadelphia in his sixty-second year. Mr. Meehan states that he had been associated with him for a quarter of a century, and that he was much respected.

—— It is with great regret that we announce the death of Mr. McLaren, which took place on Friday evening last, after a long illness. The deceased was gardener at Farnborough Hill, Hants, the seat of the ex-Empress Eugénie, where he was much respected by all with whom he came in contact. The deceased was gardener at Farnborough Hill before the Empress acquired possession; therefore his acknowledged abilities have stood him in good stead during the alterations effected there since.

—— "An Amateur Florist" writes:—"In the subject Judging Bouquets, recently discussed at some length in this Journal, all the correspondents, but especially 'A Learner,' Mr. Chard, and Mr. Garner have done good service by their useful remarks. I am glad to find that 'Learner' was not actuated by any desire to lessen the credit due to other successful exhibitors. This is a paltry feeling, and the true manly spirit is when fairly defeated to make an extra effort for victory on

another occasion. Rivalry when confined within proper limits is invigorating and beneficial to all. After what has been advanced no doubt some societies will exercise more care in the revision of their classes for bouquets and in the appointment of judges."

—— Mr. Mark Longhurst, 18, Church Road, Hove, informs us that the dates of the Brighton and Hove Chrysanthemum Show are fixed for the 13th and 14th of November next. Schedules will be ready the first week in March.

—— "T." writes, in reference to Stachys tuberifera—"I was pleased the correct name has appeared, as I have good reasons to believe they have been grown in this neighbourhood (Bickley) during the past season, and have the reputation of being a most delicious vegetable, but erroneously named Crasie's. Would anyone kindly give cultural details or the best time to plant them?"

—— At a meeting of the Royal Botanic Society, held last Saturday, Mr. John Birkett in the chair, Dr. Prior exhibited specimens of the sweet acorn called Bellotas, of which great quantities are brought into the markets of Northern Africa and Spain during the autumn months, and are eaten raw, boiled, or roasted, or made into bread by the inhabitants.

—— The Weather in the North.—"B. D." sends this note on weather in the north for the past week:—"A week of open, dull weather, latterly colder, with wind from N.E., except on morning of the 13th, when we had 2° of frost, with a good deal of rime. The temperature has ranged from 34° to 45°. The barometer, steady at 30·4 for some time, remains firm. The buds of Roses are swelling; a Tea on a wall shows half an inch of growth. Auriculas have made a decided start."

—— The Weather in December.—Mr. J. Mallender sends the following Summary of Meteorological Observations at Hodsock Priory, Worksop, Notts, for December, 1887.—Mean temperature of month, 36·8°. Maximum on the 2nd, 53·4°; minimum on the 12th, 22·6°. Maximum in the sun on the 2nd, 95·8°; minimum on the grass on the 28th, 14·5°. Mean temperature of the air at 9 A.M., 36·3°; mean temperature of soil, 1 feet deep, 37·5°. Nights below 32° in shade eighteen, on grass twenty-five. Sunshine, total duration in month, forty-eight hours. We had eight sunless days. Rainfall total fall 1·01 inch. Rain fell on nineteen days. Wind, average velocity 11·5 miles per hour. Velocity exceeded 400 miles on five days, and fell short of 100 miles on three days. Approximate averages for December:—Mean temperature, 37·2°. Rainfall, 2·03 ins. Sunshine, 52 hours (six years). The first three weeks were unsettled with large and sudden changes of temperature. The last ten days were anticyclonic with dry and rather cold weather.

—— The Meteorological Summary for 1887.—The same correspondent submits the undermentioned record:—Mean temperature, 46·6°. Maximum, 85° on July 3rd; minimum, 12·3° on January 7th. Number of frosts in shade 103, on grass 178. At 9 A.M. temperature of air, 47·3°; mean temperature of soil 1 foot deep, 47·2°. Sunshine 1420 hours, or 32 per cent. of possible duration. We had sixty-six sunless days and ninety-six bright days. Rainfall, 15·95 inches. Rain fell on 161 days. Maximum fall on Oct. 8th 0·62. Wind, average velocity 9·3 miles per hour; twenty-seven days with more than 400 miles, and fifty-seven days with less than 100 miles. The mean temperature is lower than any of the previous eleven years, except 1879, though the last two years were nearly as cold. This is mainly due to the very cold nights throughout the year, as even in May and June they were only just up to the average. The daily range is very large. The rainfall is about 36 per cent. below the average, and is much less than any year since our record commenced in 1875. The sunshine is larger than any of the previous six years. The proportion of N. and N.E. winds is larger than usual.

—— At the meeting of the Horticultural Club on Tuesday the 10th inst., Mr. Druery read a paper on "Per saltum" Variation in Wild Ferns, and after drawing attention to several examples of sudden wide variations in cattle and sheep, such as the Niata cattle and Ancon sheep, in which cattle with bulldog features, and sheep of turnspit character, had originated suddenly from ordinary breeds, he proceeded to illustrate and remark upon a large number of equally abnormal forms of Ferns which from time to time had been found wild in Great Britain under circumstances, which, as he pointed out, could only lead to the assumption that they were the direct offspring of the common Ferns, amongst which they were discovered, no intermediate forms existing likely to be progenitors. To illustrate his remarks he exhibited a large series of very beautiful Nature prints, executed by Col. A. M. Sones of Clifton, and kindly lent for the purpose by Mr. F. W. Stansfield of Sale, and proceeded to argue, that in view of the great number of these curious forms which had been discovered, and the immense amount of patience which Fern-hunting necessitated, it was a legitimate assumption that the tendency to vary under natural conditions must be as great as under cultivation, where everything was in favour, instead of against any peculiar sport being discovered. An animated discussion followed.

—— The Rainfall in 1887.—Mr. A. Pettigrew, Cardiff Castle Gardens, Glamorganshire, sends his observations on the rainfall for the past year, stating that the rain guage is 1 foot above the ground, and 38 feet above sea level:—January, 2·93 inches; February, 1·35 inch; March, 2·58 inches; April, 1·45 inch; May, 2·10 inches; June, 0·61 inch; July, 1·53 inch; August, 3·51 inches; September, 4·12 inches; October, 2·76 inches; November, 3·45 inches; December, 3·28 inches—total, 29·72 inches. The greatest fall in twenty-four hours was 1·50 inch on August 16th, and the smallest 0·44 on April 26th. The most rainy days occurred in January—viz., twenty, and the fewest in June—viz., five, the total number of rainy days being 160.

—— Mr. Robt. Scott, gardener to Ed. Priestman, Esq., Moorfield, Manningham, Bradford, writes:—"We have a plant of Poinsettia pulcherrima planted out in our stove here. I send you a specimen of the heads it produces. It is quite common here to have them branching down the stem. I have cut them with as many as ten branches. Our plant a month ago was extremely beautiful. I consider those sent now are past their best, and some of the largest have been cut, but there are still many equal to those sent on the plant. It carries about eighty heads." The specimens received were very handsome, the largest head measured 18 inches across, the broadest bracts exceeding 3 inches in diameter.

ROYAL HORTICULTURAL SOCIETY.

SCIENTIFIC COMMITTEE.—Jan. 10th, 1888.

Present:—Mr. F. P. Pascoe, Vice-President, in the chair: Messrs. Boulger, Lynch, Smith, O'Brien, Michael, Maclachan, Ridley, Murray, Morris, Smee, Wilson; Profs. Church, Scott, Ward; Drs. Lowe, Masters, and Hon. Sec., Rev. Prof. G. Henslow.

Hybrid Rhododendrons.—Messrs. Veitch & Sons sent five hybrids between East Indian forms, interesting as showing the effects of colours. The crosses were as follows:—1, Female, Rhododendron jasminiflorum, from Malacca (white); male, R. Curtisi, from Sumatra (small and scarlet). Hyb., scarlet corolla, a little broader than that of the male parent. Effect: male transferred colour and form; female had no effect. 2, Female, R. jasminiflorum (white); male, R. javanicum (orange yellow). Hyb., R. j. carminatum (bright red). Effect: male tranferred the red colour, but the white female eliminated the yellow. 3, Female, R. "Maiden's Blush" (very pale pink); male, R. Teysmanni, from Sumatra (palish yellow). Hyb. R. "Primrose." Effect: yellow male transferred colour, unaffected by female. 4, Female, R. "Princess Alexandra" (large and white); male, R. Curtisi. Hyb., R. "Eclatant," bright red. Effect: male transferred colour, female imparted size. 5, Female, R. "Monarch" (a hyb. from javanicum, but of a more pinky tinge to the orange); male, R. Malayanum (very small, diam. ¾ in., but bright red). Hyb., "Little Beauty" diam. 1½ inch, bright red. Effect: male transferred red, and eliminated the yellow. The general results observable are—1, The prepotency of the red male flowers and the impotence of white females to affect the offspring. When yellow is present—*e.g.*, in orange, then either white or red can eliminate it (Nos. 2 and 5). The "Princess Alexandra" (female white of No. 4) arose in a similar way. A cross between the larger-flowered R. javanicum (orange) with the smaller, R. jasminiflorum (white), gave rise to Princess Royal (rose), the yellow disappearing. A further cross of the last with the parent, R. jasminiflorum, now eliminated the red; the offspring, however, retained the form and large size of the corolla of Princess Royal and R. javanicum. Mr. O'Brien observed that a similar elimination of yellow had occurred in Begonias, for B. Sutherland (orange) crossed by B. parvifolia Dredgi (white) had given rise to a red flowered offspring. Abutilons afforded another instance.

Rhododendron Carringtoniæ.—Baron von Mueller sent a description of this new species, which occurs on almost inaccessible declivities of Mount Obree, at elevations of 6000 to 7000 feet. The corolla is white (from Vict. Naturalist, Nov., 1887).

The Silver Fir Æcidium.—Mr. Plowright sent the following communication with specimens:—"The extreme tip of the branches of the Silver Fir are often found bare of leaves and variously swollen and distorted. This condition has been assumed to be the result of injury from their having been bitten off by squirrels or other animals. In the specimens sent herewith, which have been given to me by Mr. H. Munro

of Cleveland, Lyme Regis, the mischief is caused, not by animals, but by a fungus, the so-called Peridermium columnare. Robert Hartig worked out the life history of this fungus in 1880. He found that the Æcidium columnare A.P.S. is a heteroecismal fungus, the teleutospores of which occur upon Vaccinium Vitis-Idæa, and are known to mycologists under the name of Calyptospora Goeppertiana (J. Kühn). The Calyptospora is not a British species, so that it is difficult to account for the presence of the æcidiospores, R. Hartig, Forst und Jagdzeitung, 1880. "Lehrbuch der Baum Krankheitlu," p. 56 to 61, t. ii. Prof. J. Kühn has, however, recently repeated Hartig's cultures with this result. He finds that there are two Æcidia on the Silver Fir, the true Æc. columnare of Abertini and Schweitz, which has for its teleutospores Calyptospora Goeppertiana and another Æcidium much resembling Æc. columnare, but with a different life history. This Æcidium he proposes to call Æc. pseudo-columnare, and it is most probable that the fungus which has injured the accompanying shoots of Silver Fir is Kühn's plant."

Potato with Incarcerated Beetle.—Mr. Maclachlan exhibited a Potato perforated and with a large internal cavity. A predaceous beetle, Pterostichus madidus, had somehow entered and apparently could not escape. The lining of the cavity, which had seemingly been excavated by some animal, was provided with a strong layer of cork cells

Aluminium in Plants.—Prof. Church called attention to the fact that though large per-centages of this metal are well known to exist in Lycopodiaceæ, it was not hitherto suspected to be general in flowering plants. A Japanese chemist having discovered it in Rhus Vernix, &c., in the gum of the lacquer resin ; Prof. Church examined Cherry tree gum, gums arabic, tragacanth, &c., and found traces to be invariably present. In the "Analyst" for January it is stated that it is also invariably present in the gluten of Wheat, in this case as a phosphate of alumina. It does not occur in association with the starch. From the precautions taken it could not have been due to the millstones. In all cases it is probably accidentally absorbed by the roots and plays no part in vegetable physiology.

Orthezia insignis, "Coccus" on Strobilanthes.—Mr. Morris exhibited specimens of this newly discovered "hug," on S. cuspidatus, from the economic house at Kew. It has been described and figured in the "Journal of the Queck. Mic. Club," vol. iii., p. 169. Mr. Michael observed that its habits did not agree with those cocci of which the larvæ lie dormant beneath the parent, but the young were always very active. The genus was, in fact, on the border of the coccidæ, and its nearest ally was Iceria. A discussion followed as to the nature of the secretion of wax. It is generally believed to be renewed, the length of the secretion depending upon the age of the insect. Mr. Browne, in the paper alluded to, says it is spreading, and is now found on Scutellaria, &c., in the adjoining house at Kew. Mr. Lynch added that apparently the same species attacked Acanthaceous plants as well.

Clerodendron, n. sp.—Mr. Morris exhibited shoots of a new species received from Sir J. Kirk from Zanzibar. It is remarkable for having the basal parts of the leaves much thickened and curved for the purpose of support. The upper half of the petiole carrying the blade can oscillate, and becomes detached. It does not appear to be sensitive, but resembles the hooked peduncles of Uncaria and stipules of Diplademia.

Monstrous Pears.—Mr. Henslow exhibited three forms of abnormal Pear growths, which appeared to explain the true nature of the fruit. The first was the "Bishop's Thumb Pear," which consists of a succulent rod-like structure, presumably of an axial character alone. In the second a branch bore two or more irregular whorls of leaves with hypertrophied and partly coherent petioles. This case, which does not appear to be common, seems to suggest that the upper part of a Pear—corresponding to the whole of an Apple—consists of the hypertrophied bases of the sepals. The figure of an Apple with so-called "interrupted growth" in "Teratology" (p. 327) would therefore receive its interpretation in that the lower part is axial and the upper foliar. The third case represented a more complete fusion, in that the successive whorls were all welded together.

Dr. Masters describes this form as follows :—"The axis dilates to form the lower fruit without any true carpels being produced, but at its summit a whorl of leaves (sepals) is formed. Above these another swelling of the axis takes place, also without the formation of carpels, and this, it may be, is terminated in its turn by a branch producing leaves."

Judging from the last specimen Mr. Henslow was more inclined to regard this "succession of pseudo-Pears" as whorls of leaves with hypertrophied petioles rather than as axial. This view was confirmed and accepted by Mr. G. Murray.

The fruit of a Pear, therefore, would seem to be axial below—*i.e.*, from its tapering point up to the base of the carpels ; but foliar from thence upwards to the summit. Apples, therefore, would have no truly axial part at all.

Plants Exhibited.—Mr. R. J. Lynch brought the following from the Bot. Gard. Cambridge :—Vanda concolor ("Bot. Mag.," 62, 3416) ; Cymbidium sinense ("Lodd. Cat." 37) ; Moricandia (Oryehophragmus) sonchifolia ("Bot. Mag.," 6243) ; Acacia platyptera flore pallido, and "Miss Hope's" Wallflower, a monstrous form, upon which Rev. G. Henslow undertook to report.

Pomegranate (English).—He also showed a small fruit, about 1½ inch diameter, grown on the walls of Emanuel College, Cambridge.

NEWTON'S SYSTEM OF GLAZING.

I HAVE seen various modes of glazing, but for strength, lightness and economy combined this stands foremost, but requires bringing more prominently into notice to be more extensively employed.

Fig. 5 gives a side view with the glass in position ; the iron bar is galvanised, making it almost imperishable. The corrugation underneath

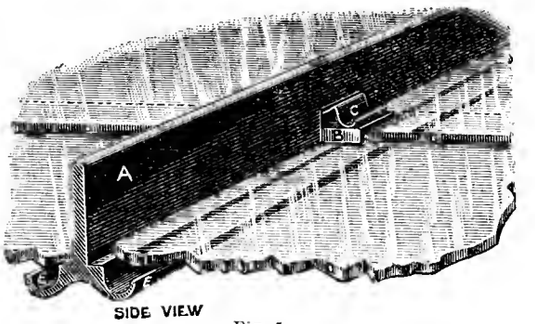


Fig. 5.

gives strength and lightness, and causes moisture condensed thereon to run down on the under edges.

As will be seen in fig. 6 they are provided at E with condense spouting, which carry off the water to the gutter outside ; the glass resting on a separate rebate enables anyone to remove easily any dirt or grease that may accumulate in the channel, rendering the house free from drip. Paint and putty are entirely dispensed with, the glass being held securely in position at the bottom at B with a lead clip, which prevents any possibility of slipping down the roof. At C is a copper spring that allows for expansion and contraction ; both these are fitted in holes punched in the bar, and the latter are bent to the size of the house required. These are only a few of the advantages.

Mr. A. H. Smee, who was appointed with Mr. James O'Brien on a Sub-Committee to report on it for the Royal Horticultural Society, thought the most practical way would be to have a roof fixed in his own garden, and a Pine stove was selected for the experiment. This being heated by

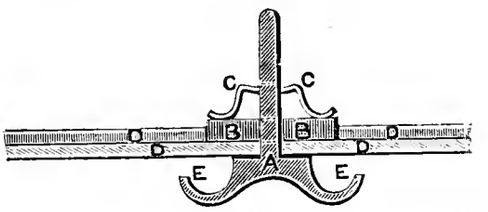


Fig. 6. END VIEW.

A, Iron Bar. B, Lead Clips. C, Copper Springs. D, Glass. E, Condense Gutters.

a large hot-water tank, it can be imagined there is great condensation and formerly too much drip, but that is overcome now. Another house of equal size was glazed at the time with wooden bars and the glass bedded in putty, using the same material outside, and the first cost of this was about the same as the other. I have visited places where there are larger houses than this on the same principle, and in each case they give perfect satisfaction. I have no motive in recommending this system beyond making it known to the readers of the Journal who, contemplate building, how well it has answered in Mr. Smee's garden. It is patented by Mr. Edgar Newton, Hitchin.—G. W. CUMMINS.

IMPRESSIONS AND OBSERVATIONS.

WE live in a world of change, with a constant hankering after something fresh, and as there is nothing like frankness I may as well say at the outset that I am taking advantage of the new year, if not to turn over a new leaf, at least to change both the head and tail of a few jottings that may from time to time appear on matters of current interest. Being extremely sensitive and sympathising with human frailty, and having thought I discerned a shadow of it now and then, the substance of which appeared to indicate that my assumption of the philosophic pen name, "A Thinker," was a little presumptuous, I cast aside the distinctive pseudonym as I would cast off an old hat, for what may happen to be under it remains the same ; and now whoever the cap may chance to fit can put it on.

I OUGHT in courtesy to acknowledge several inquiries as to my health and whereabouts that have found their way to my den. I am thankful to say I am no worse than I ought to be if I had my deserts for all shortcomings, and grateful that notwithstanding them I am permitted to take a turn at the wheel—wheelbarrow if you like—at the commencement of the year. As to where I am just now and where I have dwelt during the last fifty years, or what I have done, or am supposed to have done, in a past generation, is for present purposes, perhaps, immaterial ; still if the curiosity of any reader of an inquiring turn of mind should desire those particulars and adduce a good and sufficient reason for their possession, he can have them by post. An arrangement of this kind may possibly avert the recurrence of past misunderstandings and slight mistakes.

BEING happily in charity with all men at the beginning of the year, and desirous of continuing in this placid frame of mind, I will try and be modest and unassuming; but with all my care may fail, as others have failed before me in practising what they preach. But I am not going to write in fear and trembling, nor suppress my opinions on subjects that may come to the front. I shall ignore all individualities in my observations, and know no rank nor class. Matters, not men, will be the leading idea, though sometimes they get so mixed as not to be very easy to separate. I hope all this is consistent with modesty; if it is not I cannot be modest, and there ends the matter—that is, as the theatrical people say, the prologue, and now for the "patter."

MY first impression is that we have begun the new year well. A buoyant feeling of hopefulness pervades the editorial address for the reasons stated therein. Gardening is not going to recede but advance; public interest in horticulture is not destined to contract but expand. I am as confident of this as I can be of anything that is coming to pass. The difficulties that have been encountered have sharpened endeavour, and the greater and better the supply is of that which is essential to life—food and refreshment, the outcome of the soil, with the beauties of Nature as developed by skill—the more surely will a demand for them be created. I heard something like a groan the other day because plants had to be sold for half a crown now that would have realised half a guinea a few years ago; but what of that? The person who sold a hundred in one day, as he did, would not have sold a dozen if half that number in the palmy days he seemed to long for. When tea was 6s. a pound it was no better for the dealers, and when newspapers were half the size and twice or thrice the price they are now, it was no better for the vendors. On the contrary it was worse for them and for everybody. Such are my impressions of the editorial; but I must pass on.

"A YORKSHIRE AMATEUR," who writes like a clergyman, follows with greetings, thoughtful and kindly. He recognises the facts of life, and more—reminds us of the Great Beyond. There are moments of sadness in the life of everyone; but then comes, as he shows, the sunlight on the page. May it be a happy omen to him and to all who love their gardens and do what he urges—their duty. Our friend informs us he is in gardening patter a Rose man. It is an honourable designation, and possibly no section of the community than the Rose-loving section, scattered as its constituents are all over the land, has done more to foster a taste for gardening. Many a plot previously dismal, little more than a weedy waste, has been by the influence of good examples made bright and sweet with what is and will remain the national flower—the Rose. May the year be a great Rose year, and all who strive to make it so reap reward for honest endeavour in the good work.

THEN our good adviser tells us to cultivate the virtue of kindness in our little controversies, and not to use verbal brickbats for arguments. Very good. I hope we shall not, nor what is less vulgar, perhaps, though not more admired, seek a vulnerable point in the armour of a supposed enemy for shooting a dart, scarcely visible in transit, but which wounds him for whom it was intended. To speak the plain truth, however, I have observed persons who do not pretend to like literary combats enjoy them immensely when out of the fray. But they may easily continue too long and grow too severe, friendly though the combatants may be personally. I have often thought they understood each other, and were merely playing before the public. I am at any rate in the happy position of not having, to my knowledge, lost a friend nor made an enemy in a few literary skirmishes in which I have been engaged. We cannot be always digging and delving, or "singing sweet songs of love" to each other, but must have our little fracases to sharpen the wits, like sparkling wine. But we may all remember, and we ought to bear steadfastly in mind, the great truth brought before us so opportunely, that "a soft answer turneth away wrath." I suspect, however, it is in the nature of our race to be combatant; anyhow there is always a crush in Parliament when a "row" is expected, and we ought to find the best of natures there.

NEXT a great gardener speaks, a man of whom British horticulturists ought to be, and are, proud—Mr. David Thomson. I have had the pleasure of seeing him at home in the "old Duke's time," when the noble demesne of Drumlanrig was nobly kept. It was a treat to see the gardens then, and whatever changes death may have wrought, the chief centre of interest to gardeners remains in the man (though some lesser souled than he would object if so described) who has done so much with spade and pen to improve the craft that he adorns. Like a veteran he stands back on a point of vantage and surveys the field. To see the extent of a wood we must get from amongst the trees. Recognising the mighty strides that have been made in his time in the domain of gardening, he has faith in its future extension. So have I. Remedies are found for ills by thrifty, prudent, and enterprising nations, and peace brings prosperity, of which gardens are sure to have a good share in this land of gardens, Great Britain, and let us all in one deep wish and prayer add, Ireland. I thank you, Mr. Thomson, for your cheery contribution, and should like to whisper in your ear, Write again.

POSSIBLY, however, even a gardener so eminent, and with such a wide range of experience, may fancy he does not know what to write about. Let me reproduce a text. "It is sad to see the public tendency to prefer mere size to quality, for in the markets all good qualities must go to the wall in favour of size." Nor does this apply to fruits alone, but to vegetables; nor to markets alone, but to shows. It is "sad to see" leading prizes awarded to Potatoes unfit to form part of a respectable dinner. Brussels Sprouts will be spoiled if a reaction does not soon set in, and Onions in the form of flat-footed monstrosities are on the road to ruin. Seedsmen cannot be blamed, as they must meet the demand for big things, but judges at least should give due weight to quality. Not long ago a prize was very nearly awarded to Potatoes averaging more than a pound each, when the third judge put in an emphatic "No," remarking "if you honour such coarse tubers, and condemn the smaller, and obviously superior, what do you think the character of the show will be next year?" They saw the point, and were glad they escaped making a great blunder. The multitude, no doubt, must have bulk, as much as can be had for money, but the majority of gardeners do not cater for the multitude, and many of them, if not most, grow the produce of gardens too big by half.

"O. T. C." (page 3), writes well, on what is not often written about by a master of its culture, that gorgeous terrestrial Orchid Disa grandiflora, and the extract from Dr. Harvey in which its natural habitat is so vividly described is highly suggestive and instructive. I have seen plants apparently quite happy in handlights, with the lids propped up in a damp position on the north side of a wall in summer, also in the little greenhouse of an amateur, facing north from which frost was only just excluded in winter. "D., *Deal*," and Rev. F. Tymons have also told us how they succeed with this plant, which is not difficult to manage when its requirements are understood, and the citation on page 3 makes these clearer than I have hitherto seen. The best Disas that have come under my observation were near a tank at the end of the Heath house at Chatsworth, "between a door and a ventilator," just as described in the notes of your correspondent, who perhaps has seen them too. There are blue Disas now, I believe, but I have not seen them; perhaps somebody can tell us something about the new comers.

WHOEVER penned the article on "Melon Growing Made Easy" (page 5) is, I venture to say, a worker. There is no flourish about him. You may almost see "P. D. T." carrying out the details he points out, with good crops at the end. Such practical notes are of real service to many, for the inexperienced are always with us taking the places of others who have passed to higher grades, and it is hoped they always will be, for armies can only be kept at the full strength by the accession of recruits.

AND now I come to my old friend, Mr. Iggulden. His "Facts about Grapes" have been throughout sensible and good, but I am lucky enough to find a little to differ about in his notes. He says, on page 4, that "Alicante is superior to Gros Maroc as usually met with, Gros Colman and Alnwick Seedling." That is not quite my experience. Gros Maroc varies greatly, and is not, as a rule, so good as it looks. I have tried samples of all the Grapes named from three districts lately. The Gros Colmans in each were superior to either Alicante or Gros Maroc, and so was Alnwick Seedling. I have only once found this inferior to Alicante from Vines in the same house, but it cannot be compared with it for easy culture, and as a late Grape for untrained amateurs. By far the best Gros Colmans I have tasted this year and much superior to any Alicantes I have tried, were grown at the West Lynn vineyard. Mr. Iggulden does not appear to have a very high opinion of Golden Queen. I know only of two gardeners who grow it well—Mr. Allis at Old Warden, and Mr. Wallis of Keele Hall. Mrs. Pearson, to my mind, is far in advance of it. Mr. McIntosh has it fine at Duneevan every year, where it ranks among the best in his good collection, and now Mr. Goodacre speaks a strong word in its praise, and a Grape, I fancy, cannot be very bad that he calls good. But I see the "facts" are not finished, therefore I will say no more on Mrs. Pearson at present; but just one more word about Alicante. I think it is a good variety for bad Grape growers, though many good ones produce it grand in appearance and even fairly good in quality, though in that respect I am not able to regard it otherwise than a second or third-rate Grape.

I PASS the Orchids with the remark confirmatory of the observations of "J. J." that more Orchids are ruined by overpotting than by any other mistake in management, except a want of cleanliness, and I do not think that such names as Mrs. Gamp and Mrs. MacMuggins are appropriate for this aristocratic race of plants. If Oncidium Jonesianum had been named in "popular" fashion it would be Oncidium Rev. Mr. Jones—the clergyman who flowered it, and this would scarcely be more euphonious and suitable than the latinised appellation. But perhaps I may be prejudiced in this matter through my aristocratic tendencies, which I have tried to shake off, but they were renewed the other day through dining with a noble lord, and I fear I shall not be quite myself again till I have done a little digging.

I COULD say much about woods and plantations, having had a few scores of thousands of trees through my hands and watched them grow into money. Mr. R. Parker has placed his finger on a great blot in the management of many estates, or rather two blots—1, neglect in planting; 2, what is perhaps still more sad to see—ruined plantations through want of timely and systematic thinning. Similar neglect is painfully flagrant in many shrubberies where evergreens and ornamental trees have been purchased at considerable cost, only to be spoiled. A reformation is greatly needed in the planting and management of trees and plantations. Vast tracts of land now profitless might bring in a

substantial return in a few years if properly planted and the trees not left to ruin each other through overcrowding.

SEVERAL letters have appeared denoting a little uneasiness among under gardeners, while some of the "heads" do not seem to be altogether comfortable. It is no use mincing matters nor attempting to hide existing facts. There have always been a few greedy and exacting gardeners out of the many who are just the reverse, and there have always been namby-pamby youngsters who think they "do all the work" while everybody else gets all the plums and the praise. I could relate some rather curious experiences on this subject. I have heard of one generous member of the craft winning a valuable cup and a good round sum giving the money to his youthful helper; and of another—well, I will not say just now exactly what I have heard about him—but to put it mildly, he does not treat his subordinates with half the consideration that his master shows towards him. In my opinion, and I have had experience on both sides of the question, when a gardener is allowed to make all he can at shows, and keep it, he should not press on his assistants too hardly nor work them excessively in season and out of season for his own profit, and these in turn should not indulge in "great expectations," but be content with a little of the encouragement that may and should be given, and which in many cases is readily granted in some form or other, this at the same time stimulating to further effort and sweetening labour. This is a subject on which very calm reflection is needed on both sides, and each should endeavour to grasp all the circumstances of the case, then act in accordance with the spirit of the grand old rule, the fairest and the most just that can be adduced, of doing unto others as you would have them do unto you. If the men could think the matter over fully from the master's standpoint, and the masters look at it from the men's position, no harm could be done, while there would at least be the possibility of good resulting.

JUDGING from what is not infrequently heard, I think I must be a little differently constituted from some who have a good desire to share in the literature of gardening, inasmuch as while they "cannot find anything to write about," I can find a great deal more than I can deal with. Here I am, not half way through one issue of the Journal, and must stop my pen, even with one of the best articles before me—that on packing fruit by Mr. Pettigrew. It is rare indeed to find a subject, however ably handled, exhaustively treated and leaving nothing more to be said. Thonght gives birth to thought, and mind influences mind, impressions being formed either in harmony with or antipathy to those recorded, for reasons which if adduced would add to the common stock of knowledge. But this cannot be done without effort, at least I cannot "knock off" a series of notes, however simple they may be, without some deliberation, and I only regret that more cannot be given very often for reducing their crudity. I am not a believer in the "born genius" theory. With the exception of about one in ten millions a man is what he makes himself, whether a genius or a fool, or the impersonality of any grade between, and there is not an intelligent aspirant who reads these notes who cannot, if he tries, not fitfully, but perseveringly, soon reach what many a ripe gardener has attained—a higher grade in the ranks, the fighting ranks if you will, of the army of horticulturists, than is occupied by—and here is the new and neutral sign manual for 1888—SPECTATOR.

P.S. — In reference to the observations of a leading gardener on page 27 last week, and my thoughts thereon, let me say that I have often noticed when a judge in summing up a case highly compliments one of the advocates at the outset, the flattered man is almost sure to lose in the end, and therefore I shall not be surprised if I have to play second fiddle to this same leading gardener before the year is out. Let us hope we shall both, and all others, keep in tune.—S.

HYBRIDISING AND CROSS-FERTILISATION.

CARNATIONS.

REFERRING to your report of the American Commission at Chicago on the above subject, which appeared in your issues of the 15th and 29th ultimo, Mr. C. T. Starr speaks of the Carnation in particular and his experience in cross-fertilisation in America, allow me to confirm some of his notes as to the same work on this side the Atlantic. Following upon the scientific researches of Professor Charles Darwin and the hints given in that able work of Dr. J. E. Taylor's "Flowers, their Origin, Design, &c.," I noticed the most able natural fertilisers of the Carnation are the humble bees (Bombus terrestris). It seems as far as I have noticed that the hive bees have not power sufficient to open the petals to get to the nectaries. Whether the night moths (lepidoptera) work these flowers with their powerful long probosces or not I have not been able to ascertain, but it is evident to me it would require more than the strength of the hive bee to do so. It is certain that after the visit of the humble bee to a flower it is no use for show, for it makes a hole in the centre, disarranging the petals so much that they cannot be re-arranged by dressing. Having raised twelve seedlings of some merit during the last five years from purchased seed, and having a dark crimson "Gipsy King" of a strong robust constitution, smooth, stout petalled, very floriferous, and throwing grass so early that layers struck as soon as flowered in August may be bloomed as early as the end of November under glass, equal to the summer bloom; I made this the male and took "The Governor" as the female plant. Three days after fertilising I found the petals of the female beginning to curl, and they soon became disarranged, and having concluded that they were no longer needed, the power of the sap having been diverted to the growth of the seed and supplying nutriment to the ovaries, I removed the petals, a few daily, soon leaving the seed pod freed from any material likely to cause it to damp; on the other hand I left a few others with the petals in them. The result was that the pods of the latter damped, but the others soon developed into large pods of seed. I gathered six pods of this same cross on the 1st October, three of which I fertilised on one division of the pistil, and the other three on both, and these I am keeping distinct, as I anticipate a different result. I sowed the seed after exposing it three days on a sunny shelf, and in four days after sowing I was surprised to find nearly every seed had germinated, and have now nearly 400 plants, 2 inches high, pricked off into boxes and placed on a top shelf near to the glass in a cool house, where they continue strong and sturdy. I intend potting singly in February and removing to a cold frame, and expect them to bloom from August to October this year. This would bear out Mr. Starr's experience, except that I am in advance of Mr. Starr by four months, and I may add the experiment was upon plants in the open ground and not under glass. The result I shall be pleased to send you in September, and by then be able to accord a cross with "Mary Morris," a plant raised last year, just bloomed, deeper in colour, larger, and of the two more robust. I append a few short notes as to growth, &c., for amateurs.

HOW TO GROW AND SHOW CARNATIONS AND PICOTEES.—*Soil.*—Stiff loam or decayed turf three parts, leaf mould one part, mix road grit or coarse sand to render it open.

Potting.—Pot in the above, keep them in a cold frame during winter, giving air in open weather, plant in border (or shift into larger pots) in April.

Staking.—Use two sticks, tie round same with bast, resting the stem between.

Water.—They should never want water. In dry weather water twice a day (if needed). In continuous dry weather put a little moss or cocoa-nut fibre refuse round the roots to produce continual humidity.

Manure.—When buds are forming the only manure should be liquid from sheeps' droppings or cowdung twice a week. Avoid all artificial manures. These and strong liquid make the colours run.

Preparing for Show.—Preserve a leading bud, pinch off second and third so as to force strength into first bud. If buds begin to split, cut the calyx down slightly at each division to help equal bursting.

Dressing.—But little is needed to a good flower. The guard petals should be flat, smooth, and flower round, the others should be arranged evenly to overlap the divisions of the under ones. Bone tweezers are best for this purpose, which should be made warm as the dressing is done.

Quality of Flowers for Show.—1, Roundness. 2, Smoothness of petal. 3, Even colour. 4, Brightness of colour. 5, Depth of flower. The inner petals should be well up.

Showing.—Show on cards 3 inches in diameter, with round holes cut to the centre. Some put a second ring not quite so large, and cut in slits in the centre, and this if forced up over the lower part of the calyx will set the flower up off the box. Flowers should be equal in size (if possible), the largest (if any) in the back row. The box must be made sloping 4 inches high at the back, 3 inches at front, holes for cups 3½ inches apart each way. Arrange the colours so that one does not mar the others.

Crossing.—If in pots, these should be at least 6 inches over. If out of doors in border (it is best to have some of both), see that the ground is turned in winter to be seasoned by frost and mix in leaf mould, cow dung, and road grit or burnt ashes (or turf if the ground is light).—W. GILBERT, *Bishop's Waltham.*

WHITE CUCUMBER.

I BEG to bring to your notice a white Cucumber, which I have grown this last summer. It is known that the Vegetable Marrow will produce both green and white fruit from the seeds of a green fruit, or *vice versâ;* but I am not aware that this peculiarity in the origin of different coloured fruits has been shown to occur in the Cucumber plant. But this last summer, as I have said, I had the satisfaction of seeing the seeds of a green Cucumber give rise to plants which bore white and green fruit; and the following are the facts connected with that occurrence.

For several years I have grown the long prickly Cucumber out of doors, and have obtained seed for the following year. In 1886 the seed was obtained as usual; but the plants springing from it yielded this last summer both green and white fruit in about equal proportion, and of equal size. I allowed one of each kind to ripen, and with the seed of the white one I shall experiment next season to see whether the plants will yield only white fruit, or mixed white and green fruit, or whether the fruit will revert to the original type—the green Cucumber.

Probably this sport of Nature may not be new to you, though it is uncommon to me; but I forward to you some seeds of the white sort, by which experiments can be made by anyone who has an interest in watching the result.—GEO. VINER ELLIS.



WILLIAM ALLEN RICHARDSON.

In reply to "A Lady Gardener" I may state that this Rose does well under glass early in the season. It grows well, even luxuriantly, and flowers freely whether forced or allowed to come into flower naturally in a cool house. Well ripened plants by gentle forcing can be had in bloom from the middle of February. It does well grown in pots either trained under the roof, or the strong shoots trained round five stakes placed round the sides of the pot in autumn. If the last method is practised after strong shoots issue from the base after flowering the old wood can all be cut away and the young ones trained under the roof until they are ripe. They can then be placed outside s cured to a wall or fence until they have been exposed to frost, which will induce complete rest. It will do splendidly planted out, and the flowers early in the season will last longer fresh in water than those of any Rose I know.

The plants purchased now will not do for forcing. They should, whether planted out or grown in pots, be brought forward into growth under cool conditions. To start them in heat or attempt to force them the first season will ruin them. We presume those purchased will be plants lifted from the open ground. Planting out is strongly advised, if practicable, to keeping them in pots. In the latter they are confined at their roots, and naturally decline in vigour after a few seasons even under the best of treatment, unless they are transferred annually into larger pots.—W. B.

FORCING ROSES.

I am glad to see in to-day's Journal a column specially for Roses. Though I have long grown in quantity Roses at all times of the year, yet, like "A Suburban Amateur," I much wish some really able Rose forcer, from large experience, would tell us in "our Journal" all about how Roses should be and can be best grown in December, January, February, March, and April, including the best and most practical kind of house and heating arrangements.

I have been a diligent reader of our Journal for seventeen years, and whilst I readily admit more valuable practical knowledge of Rose-growing has been given to the world in it during that time than all other papers put together, yet I wish to say but little on the subject of forcing Roses has been given.

The four papers in *Garden Work*, given last year, were good, and amongst the best available, but "our Journal" should give us something fuller and more exhaustive than those or of anything now published.—S. S., *Herts.*

ROSE QUESTIONS.

I am much obliged to those correspondents who have written in answer to my last letter, and have a few words to say in reply. Mr. D. Gilmour is an enthusiastic patron of the seedling Briar, and he advocates what was quite a new idea to me when I saw his article in the "Rosarian's Year-Book," I mean cutting off the tap root even before the seedling is budded. In my innocence I thought the great, if not the sole, advantage of the seedling Briar as a stock was the possession of a tap root. If this has to be cut away in order to make it root horizontally like the cutting, I am even more inclined than before to give my preference to the latter. For what advantage under these circumstances has the seedling? "Its greater vigour," says Mr. Gilmour. But with me cuttings of the same age have made as much top and more root than seedlings; however, I have never tried the plan of depriving the latter of their tap roots. I wonder, by-the-by, whether anyone has tried the seedling Manetti.

Mr. Gilmour says, "The greatest merit the seedling has is that it is grown from seed, seedlings being as a rule more vigorous than cuttings." If I may quote from the "Year-Book," he there explains this statement thus:—"The cutting is part of a branch cut from a tree, and made to root by a certain course of treatment. The seedling is a perfect plant grown from the seed of the wild Rose." Now it is, I think, an interesting question whether the statement that a seedling is a more perfect plant than a cutting, is much more than sentiment. I think most people would say that there is at least something of truth in it, and that all plants are likely to suffer from too much or too long continued artificial propagation. They would probably point to the unhealthy constitutions of the Ribston Pippin Apple or Moorpark Apricot as instances of this, and if rosarians, would perhaps bring forward the alleged tendency to canker in Maréchal Niel, and the slow degeneration of other Roses, such as Prince Camille de Rohan. But these arguments would not apply to the Briar, which is only occasionally propagated in an artificial manner, and I think a majority would say that for all practical purposes the cutting Briar would be as perfect a plant as the seedling, especially if the latter were deprived of its tap root.

I do not know whether it is fair to allude in this place to another statement in the "Year Book" by Mr. Gilmour on this subject. My hear y apologies to him, if I am "not in order." He therein says the seedling Briar does not make suckers, "at any rate, not to anything like the extent, or the half of it, that the cutting does. . . . . The cutting is full of eyes to start with, and will anybody attempt to argue that the boys who are employed in nurseries to do this kind of work can remove the eyes from the cuttings so well and so completely as to make cuttings equal to seedlings, which latter have no eyes on their roots at all?" That boys are fallible is an axiom well understood by gardeners and most people. The farmers in this part of the country have a saying that "A boy is a boy, two boys are only half a boy, and three boys are no boy at all," the meaning of which, of course, is that when boys get together they are sure to play and "humbug." But is it not a little "rough" on Briar cutting to say that it is subject to suckers because boys are not trustworthy, and because some people neglect the good old adage, "If you want a thing well done do it yourself?" Many thanks, however, to Mr. Gilmour for his notes, which are always interesting.

I am extremely obliged to Mr. Worthington G. Smith for his kind answer to my query. I did not know that mildew was ever invisible in its summer stages. The case which I had in my mind of Rose mildew in a greenhouse was this: In April, 1886, I moved a Maréchal Niel standard which had stood out all the winter, and was pruned to within an inch or two of the stock, with no leaf remaining, into a house where, to the best of my knowledge, there had been no Roses before; it made three long shoots during the summer, on which I never saw a sign of mildew, and I often examined it. Towards the end of next March mildew appeared where there had been a little too much ventilation. It looked as if it had come in through the shutter, but if the simple spores are sometimes invisible to the naked eye, I suppose mildew was present during the previous summer, though undetected.

Many thanks to "S. C. B." for his recommendations of preparations against mildew and thrips. I thought I had explained that the varieties which with me are spoiled by thrips are just those which are equally damaged by the clearest water when once they are in bloom, and therefore nothing liquid can be used. Preventive measures against mildew and thrips are what we want.—W. R. Raillem.

THE CATALPAS.

The majority of hardy trees grown in this country possessing any floral beauty produce their flowers in early spring, and the ornamental shrubs cultivated here are mostly similar in this respect, so that by midsummer there are few attractions left in gardens where trees and shrubs are valued. The Catalpas, however, provide a much later floral display, and if for this alone, they would be worthy attention; but they possess several other good qualities, such as flourishing near towns, possessing a remarkably strong vitality, being of quick growth, and with their broad fresh green leaves are really beautiful for their foliage, and useful as shade-affording trees. They certainly also have a few defects, but they are chiefly experienced in northern or exposed situations, and in the south many handsome specimens may be seen that for half a century have been amongst the most admired occupants of gardens

CATALPA BIGNONIOIDES.

The tree so generally known as "the Catalpa" is now recognised by authorities under the above title; the name C. syringæfolia, which is also widely used in nurseries and gardens, having been formerly given to the same tree, and is now ranked as a synonym of C. bignonioides. The adoption of these two names has caused some confusion, and even now it is not uncommon to find them classed as distinct in trade lists. Some of the earlier writers referred this tree to the genus Bignonia, to which it is closely related, and it was consequently described as Bignonia Catalpa in several botanical works. It appears, however, that the same designation has been conferred upon at least two other species—namely, C. Kæmpferi and C. speciosa, the former by Kæmpfer and Thunberg when describing the plants of Japan, and the latter by writers on the North American Flora.

Catalpa bignonioides is an old inhabitant of English gardens, as it was introduced by a Mr. Mark Catesby from Carolina in 1726. It is faithfully described by Phillip Miller, and it was included in the Kew collection at the time Aiton published his "Hortus Kewensis." The tree is a native of Georgia and neighbouring States, but it was early and extensively planted for ornamental in the towns of the northern States as far as Massachusetts, and is now a common tree over a wide area. Loudon in referring to it says, "The French of Upper Louisiana call the tree Bois Shavanon from its being found in abundance on the banks of the Shavanon now called the Cumberland;" but as will be noted farther on, Dr. Engelmann considers this term was applied to C. speciosa, and had a different origin. In the southern counties of this country and on the Continent the Catalpa grows as rapidly as in its native land. quite a good sized tree being formed in ten or twelve years, and this has recommended it to many planters. Another advantage is that it succeeds in damp situations where some Conifers and other trees will not exist, but with the common Birch, Poplars, and Willows it flourishes admirably. A waterlogged soil is not suitable for it, but it does not object to abundant moisture where there is

a good natural drainage. In deep alluvial soil it makes most vigorous growth until a height of 30 or 40 feet is attained, and after that it becomes more spreading and bushy owing to the production of numerous strong lateral branches.

A tree in my garden at Merton is one of the oldest specimens I have seen, although it is not of remarkable size. It is about 40 feet high, with a stem 2 feet in diameter at the base and widely spreading branches, but the curious part of it is that a previous stem nearly as large had been produced, and from some accident it had to be cut down close to the soil; a shoot from this was, however taken up and has now for many years attained its full size. The tree thus had two lives as it were, and probably dates from some time in the last century. This Catalpa produces its leaves very late, and they are rarely fully out until the end of



FIG. 7.—CATALPA BIGNONIOIDES.

May. They are also destroyed by the first severe frost, and in the past autumn both it and an old Mulberry were almost denuded of their leaves in one night. The largest leaves are 1 foot long by 8 inches broad, heart-shaped, and tapering at the tip, of a peculiarly bright fresh green, quite distinct from the majority of deciduous trees, and in contrast with a dark Pinus and Arbor-Vitæ the tint is very striking. The flowers are produced very freely every year during August, and they are occasionally followed by long narrow pods 8 inches to a foot in length, but this rarely happens except after a hot summer. Strangely enough the tree did not bear one fruit last year, although the season was so favourable; perhaps it was too dry. In some gardens this Catalpa bears its fruits more frequently, certain peculiarities of situation no doubt helping it. In the United States the fruits often remain on the tree until the following spring.

When in flower the tree is very handsome, the large panicles being borne in great numbers, and for a fortnight or more these expand in succession. The corollas are peculiarly crumpled, with spreading lobes and a short inflated tube, white with yellow lines in the throat, and numerous small violet or purple dots, which give it a beautiful appearance, something like the spotted Gloxinias. The calyx has a dark purplish tinge, the pedicels being similar, and they serve to show up the flowers still more. The illustration (fig. 7) represents a panicle of ordinary size, many exceeding it in length, and with larger individual flowers. They are almost useless for cutting, as they last but a short time when placed in water.

The tree is almost solely planted here for ornamental purposes, and a moderately sheltered position should be chosen when possible, as the leaves, being of delicate texture, are soon torn and injured by wind. The wood being very brittle, the branches are soon broken and the symmetry of the tree completely spoiled. In the south it is rarely injured by frost, but the previous season's growths if unripened are occasionally killed. Owing to its starting so late in the spring it usually escapes the frosts that are often so disastrous to fruit trees. The wood is very light, but when matured and well seasoned is said to be durable, and large numbers of trees have been planted by the railway lines in North America to furnish timber. Judging by the wood produced here, however, it would not be expected to be of much use, as it is extremely brittle and pithy. The bark is of a corky nature, grey, or almost white, and it is said to possess some medicinal value. One curious character is the freedom with which shoots are produced from all parts of the old branches or stems when cut back or injured in any way.

The variety of C. bignonioides named aurea, which is remarkable for its rich golden leaves, has come into notice of late years, and is one of the finest ornamental foliage trees we possess. Throughout the summer, especially in warm bright seasons, the leaves assume a golden hue that is most effective amongst variegated or green-leaved shrubs or trees. Last season I saw a large quarter of young specimens of this variety in a nursery near Richmond, and the unusually rich colour was very notable. Though not frequently seen in gardens it has been in cultivation for over eighteen years, as a certificate was awarded for it by the Royal Horticultural Society in 1870.

CATALPA SPECIOSA.

Most of the other Catalpas are but little known in English gardens, but C. speciosa is so nearly related to C. bignonioides that it was long regarded as that species, and it may possibly be still found in some collections under that name. It is regarded as the representative of the better known tree in the valley of the Mississippi, and Dr. Engelmann has said that the French settlers called it Shawnee Wood (Bois Chavanon) after the Indians in that district. It was first brought prominently into notice as a distinct species in 1853 by a Dr. Warder, and it was then propagated extensively by Messrs. John C. & E. Y. Teas of Indiana. It is more erect in habit than C. bignonioides, equally quick in growth, and flowers several weeks earlier. Fruits have been produced as much as 20 inches in length, but they are usually much shorter. The flowers are whiter than those of C. bignonioides, and their handsome appearance led to the adoption of the name speciosa.

CATALPA KÆMPFERI.

This is the Japanese tree already mentioned as being described by Kæmpfer under the name Bignonia Catalpa. By some it is regarded as a geographical variety of the American species, but it is very distinct in habit, being dwarfer, more bush-like, with lobed leaves. The flowers are also smaller, yellow spotted with red, but they are fragrant. It was introduced from Japan in 1862, and is figured in the "Botanical Magazine," t. 6611. Sir Joseph Hooker there states that it was discovered by Kæmpfer in 1693, and introduced into Belgium by seed in 1849. It has proved perfectly hardy, and though not attaining the stature and size of leaf and flower of C. syringæfolia (C. bignonioides), it is a most welcome addition to the tree flora of Europe, being easily propagated by seeds, which have been ripened on the Continent and by cuttings. C. Kæmpferi is often found under the name of C. Bungei, a very different tree, not hitherto introduced into Europe, which is a native of North China, has a much larger flower, and pods 18 inches long.

CATALPA BUNGEI.

A dwarf-growing tree from North China, described as having lobed leaves and yellowish flowers spotted with red, borne in a raceme. This rarely exceeds 10 feet high, and a variety with very diverse leaves is named heterophylla. It is evidently a near relative of C. Kæmpferi. Catalpa Pottsi, said to be from Mexico in 1851, with pink flowers, I do not know, and the two stove species, Catalpa longisiliqua or C. longissima, and C. microphylla, from the West Indies, are rarely seen out of botanical collections.—LEWIS CASTLE.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.

THE annual meeting of this Institution was held at Simpson's, in the Strand, on Friday last, the 13th inst., when the chair was occupied by Harry J. Veitch, Esq. With a few preliminary remarks the following report was read to the meeting :—

REPORT OF THE COMMITTEE OF THE GARDENERS' ROYAL BENEVOLENT INSTITUTION FOR THE YEAR 1887.

It is with infinite satisfaction that the Committee present their report for the year 1887, and they sincerely congratulate the subscribers on the great success that has attended their labours during that time.

During the year fourteen pensioners have died, five leaving widows, and these having been found worthy, and having in every way complied with the rules, were, in accordance with Rule 7, placed on the pension list in succession to their late husbands.

This being the year of Her Most Gracious Majesty's Jubilee, it was, after very mature deliberation, determined by the Committee that some steps should be taken to mark that auspicious event, and it was eventually arranged that a special Jubilee grant of £5 should be made to each of the pensioners and each unsuccessful candidate at the last election, and that a special appeal for this object should be made to the public and the horticultural world. This appeal, your Committee are pleased to say, was nobly responded to, more particularly by gardeners, to whom special collecting cards were issued, resulting in a clear sum of £677 12s. 2d. This with the donations, &c., received at the annual festival have enabled the Committee not only to pay the largest amount ever distributed in pensions—viz., £2124 10s., but also to make the proposed Jubilee grant, amounting to £655, without trenching on the reserve fund.

This has been, with one exception, the most successful year on record, and the Committee have to return their best thanks and acknowledgements to Baron Ferdinand De Rothschild, M.P., who so kindly presided at the anniversary festival on the 29th June last, who, by his influence and his eloquence, added to his liberality and that of his friends, so materially assisted in securing a very large subscription list, and making the festival one of the events of the season.

It is with infinite satisfaction that your Committee have to announce that the Right Hon. Joseph Chamberlain, M.P., most kindly consented to succeed Baron Ferdinand De Rothschild as chairman at the festival when held in the ensuing summer, and they have reason to believe that with such a distinguished President the festival will be a grand success.

The number of pensioners on the list is 114 now, this day increased to 126.

After the report was read the following resolutions were adopted :—

I.—It was moved by Mr. B. Wynne, and seconded by Mr. A. F. Barron, and carried unanimously, That the Report of the Committee and statement of the accounts of the Institution as certified by the auditors now read, be received and adopted, and that the best thanks of this meeting be given to the Committee for their able management of the Institution during the past year.

II.—Moved by Mr. John Lee, and seconded by Mr. W. Roupell, That Mr. Harry J. Veitch be elected the Treasurer, and that the thanks of the meeting be presented to him for the great interest and trouble he has taken in the affairs of the Institution during the past year.

III.—Moved by Mr. W. Richards, and seconded by Mr. John Lee, That Mr. N. Sherwood, Mr. John Roberts, Mr. John Laing, Mr. A. F. Barron, Mr. Geo. Woodgate, and Mr. Henry Tillman be elected on the new Committee.

IV.—Moved by Mr. Webber, and seconded by Mr. Richards, That Mr. John Lee, Mr. J. F. Meston, and Mr. Jesse Willard be re-elected auditors.

V.—Moved by Mr. Watkins, and seconded by Mr. Woodbridge, That Messrs. E. Tidswell, James Webber, E. W. Cathie, George Monro, and William Richards be appointed arbitrators.

VI.—Moved by Mr. John Lee, and seconded by Mr. Watkins, That Mr. Cutler be re-elected Secretary.

VII.—In consequence of four vacancies having occurred in the list of pensioners since the voting papers were issued, the Committee recommend that after the pensioners for whom the election has been called have been elected, the four next highest on the poll shall be declared elected. Mr. H. J. Veitch proposed, and Mr. Woodbridge seconded the adoption of this suggestion, which was agreed to unanimously.

VIII.—The Committee also recommended that Elizabeth George, Patrick John Haraby, and Caroline McElroy, being in distress and having complied with the regulations, should be placed on the pension list, in accordance with rule 6, without the trouble and expense of an election. Mr. Veitch moved and Mr. Watkins seconded this proposition, which was adopted.

IX.—Moved by Mr. A. F. Barron, and seconded by Mr. Monro, That the best and grateful thanks of this meeting be presented to Baron Ferdinand de Rothschild for his great kindness in presiding at the last Anniversary Festival, for the able and eloquent manner in which he advocated the cause of the Institution, and for his liberality and that of his friends upon the occasion.

It was unanimously resolved that a grant of £10 be made to the widow of Charles Osman of North Wootton, Sherborne, who died only a fortnight before the election, and who, if he had lived till then, would have been certain of success.

The total number added to the pension list was twelve—namely, the three mentioned above and the following—Thomas M. Wall, Matilda Charlton, Charles Papworth, James Ewing, William H. Head, Elizabeth Horton, Henry Meeham.

In reference to the proportion of the working expenses to the amounts paid in pensions the following figures are interesting. The per-centage of working expenses was in 1861, 26·6, the pensions paid being £739; in 1866, 26·9, pensions £739; in 1871, 22·4, pensions, £824; in 1876, 21·2, pensions £986; in 1881, 19·5, pensions £1200; in 1886, 14·8, pensions £1950; and in 1887, 15·8, pensions £2779.

STATEMENT OF THE RECEIPTS AND PAYMENTS OF THE GARDENERS' ROYAL BENEVOLENT INSTITUTION FOR THE YEAR ENDING DECEMBER 31ST, 1887.

Dr.			£	s.	d
To Balance, 1886			380	3	10
„ Annual Subscriptions	1282 15 0				
„ Donations at and in consequence of Annual Dinner	866 15 0				
„ Jubilee Collecting Cards	677 12 2—				
	1544 7 2				
„ Advertisements	53 18 6				
	2881 0 8				
„ Dividends on Stock	633 0 0				
„ Interest on Deposits	42 10 3—				
	675 10 3—				
			3556	10	11
			£3936	14	9

Stock in 3 per cent Consols, £21,100.

Cr.			£	s.	d
By Pensions	2124 10 0				
„ Special Jubilee Grant	655 0 0—				
			2779	10	0
„ Secretary's Salary and honorarium			186	5	0
„ Printing			166	11	6
„ Rent of Office			50	0	0
„ Stationery			17	14	8
„ Advertising			1	16	6
„ Expense of Annual Dinner			77	6	0
„ Postage and Travelling Expenses			93	10	4
			£3372	14	0
„ Balances—viz.,					
With Treasurer at Bankers	548 11 10				
With Secretary	15 8 11—				
			564	0	9
			£3936	14	9

Audited 9th January, 1888 { JOHN LEE, JOSEPH F. MESTON, J. WILLARD.

LONDON'S LESSER OPEN SPACES—THEIR TREES AND PLANTS.

NEW SERIES.—No. 6.

A MOVEMENT for planting trees about our towns is one of the favourable signs of the time, and owing to the changes that occur in the metropolis, many opportunities offer for the introduction of trees or shrubs along roads, in odd corners, and vacant plots turned into gardens. Perhaps those concerned in this limit themselves too much to a few species, as witness the abundance of Planes of the Oriental and American varieties, though many other trees will thrive in London smoke nearly or quite equal to these. But now we are improving somewhat the London atmosphere, its fogs are less frequent than they were; one thing, however, against the vegetation is, that through the extensive digging and boring that has gone on, especially about the central districts, the numerous springs have been dried up that our ancestors found favourable for their orchards and groves outside the city walls. The yet existing names of Moorfields and Finsbury testify to the moist character of old London; even when the Mansion House was erecting early in the reign of George III. the builders were impeded by such a flow of water that piles had to be driven to get a foundation. It is worth remembering that the site was once that of the Stocks Market, so called like the adjacent church, from a huge pair of stocks close by, and which at first a meat market, became after the great fire a market for herbs, roots, and fruits. It was, in fact, the parent of the present Farringdon Market. Within the walls of the Bank of England a garden yet remains that was formerly the burial ground of the Church of St. Christopher-le-Stocks. It has two trees, and is planted with evergreens, which, when their enclosed situation is considered, look fairly healthy. It owns two Limes, not very aged, but interesting as being probably descendants of older trees that once grew here, for on this ground, or somewhere near, tradition says there was formerly a rookery in the heart of the City. For the sake of variety some of those in charge of the small open spaces of London have introduced pigeons and monkeys, and one clergyman has asked a scientific journal whether a rookery could not be started in a garden he has charge of. Rooks, like most birds, are fond of their own choice in the matter, but the circumstance that extinguished the rookeries about London was the building over the fields, this depriving them of their subsistence; and this difficulty remains still unless rooks could be fed like tame birds.

On the west side of the Bank of England, enclosed by a high wall, a straggling group of Elms, tall, but of moderate girth, look down upon Princes Street, with its rush and roar by day, and its contrasting stillness at night. These are in what is left of the Grocers' Garden, which it is likely once extended from Old Jewry to Lothbury. Even in the eighteenth century enough of the garden ground remained to furnish citizens with a pleasant evening stroll. Other City Halls had their gardens in days of yore. One much famed, yet extant but reduced sadly, is that of the Drapers', between London Wall and Throgmorton Street. It was part of the garden of Cromwell, Earl of Essex, and the Drapers' Company when they acquired it laid out the plot with walks, planted rows of Limes and Elms, also put up "pavilions," and for centuries the ground was open to the public. An old author mentions it as commanding fine views of the hills and woods about Highgate. In 1888 we find the diminished space shut in by tall buildings, but Limes and Elms are still to be seen, and there are shrubs scattered over small beds, in which, during summer, plants are put; but, of course, during January the ground appears dreary. A fountain which is kept playing sounds singular amid the busy hum of the talk and traffic just outside.

Finsbury Park is one of the recently formed parks, with an extent of more than a hundred acres, but it is a long way from Finsbury. North of London Wall there is a densely populated district at present poorly off for recreation grounds, but Finsbury Circus and its Square, which might delight the thousands of children who are now obliged to play in courts and gutters, are jealously closed except to a privileged few. It is to be hoped the Public Gardens Association will succeed in getting these and some other suburban spaces at the north made free to the public. The Circus is one of the metropolitan gardens that are of oval form, and it is a fair example of one laid out in the Georgian style; trees far too numerous to favour the growth of flowers, yet picturesque, because they have not been extensively clipped for years. None very venerable, the older being Hawthorns, Limes, and Poplars, the locality, once fenny, and still rather moist, suits the last. Though it encloses only four acres, by his arrangement of the paths and shrubberies the projector managed to give the impression that the space is much larger; it is below the level of the adjacent ground. Finsbury Square beyond is about half as large again, but contains a less number of trees, none as old as its formation, which was just a century ago. Here are a few specimens of the Bladder Senna, which might be more frequently planted in London gardens. We are now close to Bunhill Fields, so called from the largest of three fields belonging to Finsbury Farm. Another was named Mallow Field, from the familiar wild plant growing freely there. Bunhill, if not at first "Bone-hill," as some think, might have been thus styled, for it had been a place of interment before the Stuart times, when the present ground of about seven acres was formed. Interesting, certainly, as an historic spot, but though it is reckoned as one of the City recreation grounds, it possesses few advantages, save that of being an open space free to the sky. It is too crowded with monuments of all sorts to allow of its being properly laid out as a garden, though a number of small beds have been made here and there amongst the tombstones and the dank grass. The number of shrubs is small, but there are some avenues of trees shading the asphalted walks, probably planted since Her Majesty's accession; the older trees, of which there were a few, have been removed. A less space adjoining, also a part of the Bunhill Fields, is the Artillery Ground, long reserved for military exercises. At one time, so one author tells us, the ground of the Artillery Company was called Tassel Close, from the "tassels" grown there for the benefit of cloth-workers. These, of course, were what we now style "Teazels," the heads of Dipsacus fullonum, and still applied to the like use. An ancient thoroughfare near this space is Cherry-tree Lane, perhaps a reminiscence of the nursery and garden owned by John Milton, temp. James I., and which was south of the Old Kent Road.

Hoxton, to the north, is still badly off for open spaces. Our forefathers knew it as Hogsdon, and at one time it was a resort on account of a mineral spring of some supposed virtues. Its squares, Hoxton and

Charles, are scarcely three acres together, and even these are closed at present, but it is hoped they may shortly be opened to the public. Both contain a few trees; the most notable one in Charles Square is an old Lime with a forked trunk. About this square are scattered relics of ornamental stonework, which look like part of an ancient arch. Hoxton Square has two rather fine specimens of the Weeping Ash. This, unlike most squares about London, is higher than the roadway, so better drained, but like its neighbour needs replanting. A little further north is the churchyard of St. John's, Hoxton, surrounded by Planes and Elms, and opened a few years ago as an experiment, but owing to the injury done by some uncultured juveniles not much has been done yet towards a floral display. This is an acre in extent, literally, a "God's Acre."—J. R. S. C.

THE PROPAGATION OF SMALL FRUITS.

THERE are few operations connected with gardening which delight amateurs more than the art of propagating. Apples and Pears afford a grand field in this respect, but they are too difficult to graft or bud to be successfully accomplished by all amateurs, and the next best fruit trees to them are Gooseberries, Currants, and small fruit bushes generally. The present is the best of all times for attending to the matter, and in dealing with the most popular kinds I will begin with

GOOSEBERRIES.—I need say nothing on the excellency of this well-known fruit. It is a general favourite. It should be grown in every garden without exception, and it is in the most of them, but in many cases the old worn-out bushes might advantageously be supplanted by new young and vigorous bushes. Old bushes may bear profusely, but the fruit is invariably small and deficient in flavour. If the very best flavour is desired and fruit of the finest size required, strong healthy trees only will produce such. I would never approve of propagating or perpetuating an inferior variety. The best do not require any more space or culture, and those who grow only inferior varieties stand greatly in their own light. In selecting cuttings the young growths produced during the last summer are the best. They must be straight, or nearly so, and strong. Examine the bushes before pruning is commenced, and cut out the shoots which it is noticed will make the best cuttings. If the cuttings cannot be made and inserted properly at once do not keep them out of the ground, but tie them in a bundle and insert them several inches in the ground cut ends downwards. There is then no danger of their shrivelling. Allow all the spines to remain on, but take every bud out from the bottom half way up the stem or more. If the cutting is a foot in length, which is a good size, the buds may be taken out to a distance of 9 inches up the stem. This will allow 3 inches of stem to be put in the ground to root, 6 inches as a stem to the bush, and 3 inches to branch out to form the head. If possible no cutting should be less than 1 foot in length, and they may be 15 inches or 18 inches, the extra length being added to the stem.

A rather light sandy soil is the best to root them in. The ground should be dug and made very smooth on the surface, a line then being placed across it and the cuttings dibbled in along this. A distance of 6 inches or 8 inches between the cuttings and 15 inches between the rows will be found suitable, the soil being trodden firmly on each side of the rows after the cuttings have been inserted. Throughout the summer the Dutch hoe should be run between them occasionally to keep the weeds down. Apart from this they require no farther attention. Probably every one will not root, but if treated as here suggested I could guarantee nine to root out of every dozen. If they do well the first year every alternate one may have to be lifted from the cutting rows during the succeeding winter, and some will fruit in the second and all in the third year.

RED AND WHITE CURRANTS.—If anything, Currants are more easily rooted than Gooseberries. They are certainly more comfortable to handle, and all the cuttings should be selected with the greatest care. In length they should be much the same as the Gooseberries, and the buds must be removed as in their case, as unless they are taken out on the part that goes underground and forms the stem they will shoot and form green twigs when growth begins, and this is not desirable. As a rule, we continue with our Currant cuttings after the Gooseberries, and the same soil and after treatment suits them all.

BLACK CURRANTS.—These are also treated like the above, but they are hardly so free in rooting, and where old bushes exist that have become a close mass of shoots from the ground they may be dug up, the young shoots with roots attached selected as new plants, and if placed in good soil they will bear some fruit the first year and a great deal the second. This is a quick way of raising a stock of Black Currants, but it is a mistake to insert old divisions to become new plants, and where young growths cannot be secured with roots the cutting plan ought to be practised.

RASPBERRIES.—Though not so generally grown as the Gooseberries, they should be seen in every garden. They have an advantage over all other small fruits in growing well and fruiting freely in cool shady spots, where other fruits would not be profitable, and this is a point in their favour which should not be overlooked. I have seen many capital crops secured from them when growing against shady boundary walls in small gardens, and they also do wonderfully well under the partial shade of tall-growing Apple, Pear, and other fruit trees. When Raspberries are planted at first they are only small as a rule, with one or two stems, but after a year or two these throw out side suckers which grow up to young plants at a distance of 6 inches or more from the main root, and it is these which should be dug up and replanted to form young or new plantations. In this way there is no time lost in raising a new stock of Raspberries, because the young ones taken off and replanted now or at this season will bear a considerable quantity of fruit the first summer. This is the only way of propagating Raspberries I have practised, and I can assert it is easy and effective.—J. MUIR, *Margam Park, Port Talbot.*



SHOWING—OWNERS' CLAIMS.

MANY letters having lately appeared in your paper anent Chrysanthemum shows and prizewinning thereat, written from the gardeners' standpoint, I venture to pen a few lines in the interest of a class now almost consigned to oblivion—to wit, the gardeners' employers. I notice that a general feeling of regret, in which I heartily join, was expressed, that, on account of his employer's decease, the gardener who staged the winning stands for the 1886 challenge cup at Hull was ineligible for the competition last year. I also notice that some of your correspondents, from whose views I emphatically dissent, stated that this gardener had a perfect right to exhibit in the class last year. It must be borne in mind that not the gardener but his employer is the owner, and therefore exhibitor, and that on the employer dying his ownership necessarily ceases, which would effectually prevent his late possessions being exhibited as still belonging to him, and most certainly they are not the property of the gardener.

It is, I think, a pity that under the lead of, I believe, the National Chrysanthemum Society, the employers' names should be now so generally eliminated from the prize list. In olden times the prize card used to run "Exhibited by A. Blank, Esq.; gardener, William Hobbs;" now, on the contrary, one reads, "Exhibited by Mr. Williams Hobbs, gardener to A. Blank, Esq." When the prize list appears in print Mr. Blank's name has vanished utterly, and Mr. William Hobbs stands forth in solitary grandeur thus, "first prize W. Hobbs" (I refer to the official prize list of the National Chrysanthemum Society November Show, as it appeared in the form of an advertisement). This change is spreading, two Chrysanthemum Societies that I know of having altered the wording of their prize cards this year. The entry forms as a rule contain a stipulation that the exhibits must have been in the possession of the exhibitor for a certain time; this is complacently signed by the gardener, heedless of the fact that he possesses not even a particle of the soil in which the intended exhibits are grown; but having posed as the possessor of the exhibits, he also appears as the exhibitor, and eventually annexes the prize money, carefully avoiding, as appreciatively alluded to by one of your correspondents, any competition where the prize happens to be a cup, for fear his employer may so far forget himself as to put in a claim to it. Now I venture to state that in no other species of competition is the owner such a nonenity as in a Chrysanthemum Show. If my thoroughbred wins the Derby neither my trainer nor jockey is alluded to as the owner; if my yacht wins a Queen's cup my captain is not singled out as the possessor of the fastest yacht afloat; if my hunters win prizes at a horse show, my Herefords at a cattle show, my retrievers at a dog show, my game cocks at a Poultry show, my name appears in the prize list as their owner; but should my Chrysanthemums win a prize at a flower show, the prize list contains my gardener's name and not my own? This glorification of the gardener, who has done no more to deserve such honour than any of the other "heads of departments" whose charges have competed with success, it is hard to justify. To neither the employers, whose millions bring the highest honours within the reach of the head of his regiment of gardeners, nor to the exhibitor whose personal care and handiwork enable his one man to achieve success, can this state of things be gratifying; it may be so to the gardener himself, but I should doubt if in the long run he does not find it bad policy.—WRAITH.

CHALLENGE TROPHIES.

MY thanks are due to "A Liverpudlian" for trying to correct my memory in reference to a trophy being offered at Liverpool on the same conditions as those at the other places. I was apprised of the error into which I had fallen by my friend Mr. Mease on Monday the 9th inst. At the time of writing I was under the impression that the first cup given by Messrs. J. Williams & Co., Mount Pleasant, was competed for on those conditions. If I am not mistaken it was first offered to the Committee on those terms with other conditions that need not be entered into here, and was finally given without restrictions. It was the discussion that took place over the matter that led me astray. I should have corrected the matter when reverting to the subject of "challenge vases," which I intend doing. While I am anxious to be correct, the slight mistake made does not alter in the least my arguments against the unpopularity of these large restricted vases. I observe with satisfaction "Beverley's" note, and hope exhibitors and others will pass their opinion on the subject. I wrote purposely to draw out the opinion of others, and the Secretary of the Hull Society has done the

same. This is the time to discuss the subject, so that managers of shows can form a just estimate how far their efforts in taking a foremost position in offering "cups" are appreciated, or will be when the time of exhibition arrives. If good substantial prizes are offered, and the competition is poor or only second rate, not only is the committee disappointed, but the public as well. I wonder how many of those who have competed for "challenge trophies" will do so again; and it is indeed questionable if we have heard the last of those that have been won.—WM. BARDNEY.

ANNUAL DINNER OF THE PORTSMOUTH CHRYSANTHEMUM SOCIETY.

THIS took place at the "Royal Albany" Hotel on Friday, the 13th inst. F. Power, Esq., the popular Secretary, presided, the vice chair being occupied by G. Ellis, Esq.; they were supported by Sir W. D. King, J. Moody, Esq., W. P. Winter, Esq., W. Kimber, Esq., R. Barnes, Esq., &c. Letters of apology were read from Sir F. Fitzwygram, M.P., The Mayor of Portsmouth, and Aldermen Whitcombe and Baker. Amongst the successful growers of this favourite flower who were also present we noticed Messrs. Kimber, Collins, Molyneux, and Drover, &c. The loyal toasts having been duly honoured, Sir W. King proposed in felicitous terms the toast of the evening, "Success to the Portsmouth Chrysanthemum Show." He stated this was the third dinner he had attended, and it afforded him much pleasure to briefly notify how each season had been more successful than its predecessor, for though the Society had given nearly £130 in prizes at its last Show, yet they still had a balance in hand of £121 15s. 1d. He was pleased to learn that the Committee thought of keeping the next Show open for three days. There were 160 subscribers, which no doubt would soon be doubled, and in a few years he was sure they would rival many of the large shows near the metropolis.

The Chairman, in responding to the toast at some length, said they had received the support of some of the very best growers in England, such as Messrs. Molyneux and Drover, and they intended to try the experiment of having the Show open for three days this year, and by offering valuable prizes they hoped this new departure would make the Society's next Show more successful than ever. Messrs. Molyneux and Drover responded on behalf of the growers, the former remarking that he feared the three days would be a mistake; however, that was for the Committee to decide, and suggested the offering of a prize less in value than the cup but higher than any money prize the Society has hitherto offered. Mr. Drover coincided with Mr. Molyneux's views in regard to the three days, and advocated the Society holding an additional show the week before Christmas. Messrs. Barber and Chatfield responded for the amateurs. Mr. N. Fuller, Idsworth Park, responded for the Judges. Messrs. Power, Collins, and Penfold responded to the toast of the Committee.

CHRYSANTHEMUM MADAME PAGES.

MESSRS. J. R. PEARSON & SONS send us from Chilwell blooms of the white Japanese Chrysanthemum Madame Pages. This variety is stated to be invaluable as a late bloomer; it is a strong grower, reaching the height of 6 or 7 feet. The plants are grown in 8-inch pots, are stopped twice. It is very proliferous, producing on an average eight or ten sprays similar to the one enclosed. When disbudded it produces as many substantial blooms, which are useful examples for wreaths or crosses or any other floral decorations. The variety is evidently a very useful one, a small Japanese, free, pure white, and suggestive of another good late variety, Princess Blanche.

SHEFFIELD AND WEST RIDING CHRYSANTHEMUM SOCIETY

THE third annual dinner of the above Society was held on Wednesday evening, January 11th, at the "Clarence Hotel," High Street, Sheffield, and was the largest gathering of the kind the Society has yet held. Between sixty and seventy of the patrons and members were present. The after proceedings were presided over by C. E. Jeffcock, Esq., Vice-President, in the unavoidable absence of the President (Mark Firth, Esq.). The usual loyal toasts having been proposed from the chair, Mr. Jarvis, one of the Hon. Secs., gave "The Army, Navy, and Auxiliary Forces," which was responded to by J. P. Jeffcock, Esq., Lieutenant 19th Hussars. "The President and Vice-Presidents" was proposed by Mr. John Haigh, and given with musical honours. The Chairman responded in a very happy speech, which created much enthusiasm. Referring to the rapid growth and success of the Society, he said much of this was due to the energy which had displayed in the Society's interests by the Hon. Sec., Mr. W. K. Woodcock. He was pleased also to find how thoroughly Mr. Woodcock's work had been appreciated by the Committee and members of the Society generally, and he had great pleasure in presenting to him a purse of gold, which had been subscribed by the Committee and members. Mr. Woodcock in returning thanks said that he felt very deeply this latest instance of the kindness and good feeling towards himself, and which had taken him by surprise. It was not, however, the first by very many of the proofs of their kindly feeling he had experienced, and instanced as a very striking one the fact that when at the recent annual meeting and election of officers he had expressed a wish to resign the office of Hon. Sec., on account of the work pertaining to such office pressing too heavily upon the limited time at his disposal, two prominent and efficient members of the Society, Messrs. J. W. Jarvis and J. W. Needham, had at once volunteered to undertake the whole of such work as joint Hon. Secs., conditionally that he would withdraw his resignation, and which under such circumstances he had felt himself bound to do.

The toast of the evening, "The Sheffield and West Riding Chrysanthemum Society" was next proposed by E. H. Wake, Esq., who in an effective speech which was frequently applauded spoke of the great pleasure which the success of the Society had afforded him during the past season. It had very largely increased its lists of patrons and members, and was able to show a balance on the right side financially. Mr. W. K. Woodcock responded. Mr. J. Shipman proposed, "The Patrons and Subscribers," which was responded to by C. H. Firth, Esq. The other toasts on the list were, "The Nurserymen and Non-Competing Exhibitors," proposed by Mr. G. S. Stocks, and responded to by Mr. W. Shaw.

"The Officers of the Society," proposed by Mr. Allison, responded to by Mr. J. G. Newsham, and "The Hostess," proposed by the Chairman, responded to by Mr. Jno. Haigh, on behalf and by request of Miss Telfer, the Manageress. Special prizes amounting to a total value of over £40 were promised during the evening to be added to the Society's schedule for the next show, to be held November 16th and 17th, 1888. The donors and amounts were:—Mr. H. Broombead (Hon. Treasurer), silver cup, value £15 15s.; Mark Firth, Esq. (President), £5; C. E. Jeffcock, Esq. (Vice-President), £5; A. Wilson, Esq., £5; Mr. Edge, £2; Mr. Holden, £1; Ditto, £2; Mr. Wilkinson, £3; Mr. Webster, £3; Mr. Allison, £1; Messrs. Fenton Bros., Silversmiths, amount not stated.

NEW VARIETIES.

NOW—"when the hurlyburly's done, when the battle's lost and won"—is the time to exchange notes on the newer kinds, so that additions may be made to an already extended list. Such notes we think will prove interesting to and help to guide those among the great army of Chrysanthemum lovers who cannot visit the exhibitions and see the novelties for themselves. Anything of merit in the way of new flowers is now sure to be found at the National and such shows as the Crystal Palace. To my mind the most remarkable circumstance connected with the incurved class is the rapidity with which the variety Princess of Teck is producing new sports bearing a family likeness. A year or so ago we had but two, it now wants that number only added, and they will be able to say with the tribe of "queens," we are seven. Taking form of flower, smoothness of petal, and habit of growth, this handsome group of "Tecks," were it not for the drawback of coming rather late for the shows, would undoubtedly be rivals to that grand type of which Lord Alcester is the leading flower. The Princess herself we compare to the most perfect of all Dahlias, Mrs. Gladstone, and who can help admiring a well grown specimen of the Hero of Stoke Newington? Mrs. Norman Davis is a valuable acquisition, and another year, from plants struck in a cool manner and not forced into flower, may not be so variable, many of the blooms as shown being as bronzy as they were golden, and out of character as regards florets. Lord Eversley will be sought after by all who desire neatness and delicacy in an incurved flower, as also will the latest of the sports, the bronze Charles Gibson. The comparatively new bronze Queen of England we saw in rare form on one occasion this season at a local show. Its florets were as perfectly arranged as, and in other respects equal to, a good Lord Alcester; seen in such trim it is a gem. With all regard for the skill of the producer we should call it the result of one of those unaccountable accidents that we wish would more often occur in our own case, especially with that Japanese beauty Belle Paule. For three seasons we have had it and grown it a variety of ways, but at yet have not had a presentable flower. This by the way. One "sport" we know of that has appeared this season on a plant of Prince of Wales, which, if it retain its character, will be a fine addition. The florets are so multiplied that it reminds one of a dark rose-coloured Princess of Wales. In his interesting retrospect, page 464, last vol., Mr. Molyneux writes—"I am inclined to think that some new incurved varieties may be brought to light during another year as the result of this season's tropical summer. I have noticed that an unusual number of florets have been found in all incurved blooms this season, probably the result of extra ripening of the wood. This may then be the means of producing new and varied forms in the section to which we have so few additions—the incurved. Assuming "sports" are meant we fail to understand how an extra number of florets in blooms grown this year can be conducive to the increase of "new and varied forms" during another year, and have observed that sports appear more frequently on plants grown in a more natural manner than those subjected to such "generous" culture as is necessary for producing blossoms for exhibition. In this view we are supported by the above writer himself, for on page 57 of his book "Chrysanthemums and their Culture" we read—"The present general system of growing Chrysanthemums for the production of large blooms is not favourable for increasing the number of new varieties by sports as the side shoots are taken off the plants as they grow, and it is from these side shoots, when they are allowed to develope into flowers, that the largest number of sports appear."

The new Japanese make a goodly list, and among them are improvements that will rank with the very best of the class. The importations of Messrs. Cannell, Swanley, from Japan must be mentioned first. Connected with these we are pleased to know the glaring error whereby the stand of grand flowers exhibited by Mr. Martin, West Hill House Gardens, Dartford, was left out of the running for the Jubilee prize at the Aquarium Show has been set right. No little comment was caused by the prize cards being placed as they were, and we do not think judging by ballot will be very extensively adopted at Chrysanthemum exhibitions. To say the least, it is an unnecessary innovation.

Edwin Molyneux is a grand flower, quite worthy of its name,

colour a rich combination of deep crimson and old gold. Mr. and Mrs H. Cannell are two superb sorts, the former a nobly built yellow, and the latter a creamy white of handsome proportions; these three varieties will help to win in many a future floral fight. C. Orchard, something like Comte de Germiny in colour, but flatter in build, and Mr. Wellam, a white with bright rose splashes, must also be added to all collections. The value of these importations make one hope the energetic firm above mentioned will secure for us all that "white elephant" among Chrysanthemums—we mean the "blue" variety, the charms of which are said to be gazed upon only by a few favoured worshippers in Japan.

We have not seen Avalanche, but a new one that can win premier honours, as this did at the late Portsmouth Show amongst so many beauties must be a gain indeed. Edouard Audiguier in form, colour, habit of growth, and constancy is first class, and is already a favourite. No one seems to have grown it so well as its introducers, Messrs. Davis and Jones. That winner of so many certificates, Ralph Brocklebank, a light yellow sport from the well-known Meg Merrilies, needs mention only, although "Meg" is not the style of bloom to our taste comparable to the best of all Japanese varieties, Mdlle. Lacroix. The white of this fascinating flower may not be like that of Elaine, "pure as the driven snow," but its graceful and captivating form make it "a thing of beauty and a joy for ever," while the plant is sure in producing its charms and is of easy culture. Carew Underwood, sported from Baronne de Prailly, is a variety of great excellence, of a lively colour of bronzy red, and in all ways equal to its parent. Florence Percy, sent out last year, is an elegant pure white variety, with thread-like florets, very large and full from early buds. Mrs. J. Wright is another white which gains in favour as it becomes more widely known, and like the foregoing produces the finest flowers from crown buds. Were it not for its early character Phœbus would make a telling variety on an exhibition stand; however, it must be grown for the richness of its yellow and for the grace of its form. We find it lasts a very short time in perfection. In Gloriosum we have a large flower in the way of Soleil Levant, but finer, although the colour is less bright and striking. Roi des Japonaise, a useful addition, opening bright orange red in colour, and when fully developed fading at the tips of florets a deep yellow. Mdlle. Blanche Pigny was seen this year in many stands, and will gain in popularity, notwithstanding that we have so many good whites in the field. The flower is well formed and of good substance. About the best of the French introductions of the present year is Mr. Garnar. Its florets are drooping, the flower full and clear, bright yellow in colour. Duke of Berwick will make a handsome exhibition bloom, colour white tinted rose with thread-like florets. Hamlet, salmon red, is also well worth growing. To judge the per-centage of "wheat" we find among the French "chaff," it may be mentioned that the last three are selected from about 100 new varieties; still, in justice to them, a few more may turn out good after a further trial. Our raisers across channel are evidently taking the tide at the flood, which, we are told, leads on to fortune.—H. SHOESMITH, *Saltwood, Hythe.*

CHRYSANTHEMUM CULTURE.

[A paper read by Mr. Edwin Beckett, gardener to H. H. Gibbs, Esq., Aldenham House, Elstree, before the last monthly meeting of the St. Albans' Horticultural Society.]

As the Rose is considered to be the queen of the summer flowers, which undoubtedly it is, so I claim for the Chrysanthemum the title of queen of the autumn flowers, and no plant in cultivation has made such rapid progress during the last few years as this. The Chinese, or incurved section, was introduced from China somewhere about the year 1764, but it seems to have found but little favour till within the last twenty or thirty years. Now nearly every town holds its annual exhibition. As a mark of its increasing popularity, mention may be made of this year's Portsmouth Show, where, during the last three hours of the second day, no less than 8109 visitors paid for admission. And this is no exception, for wherever good exhibits are brought together, as a rule, they are well patronised. The later introductions from Japan have had much to do with this. They have such a striking appearance, the diversity of form and richness of colour making them most welcome during the dull months of November and December. They are also very easily grown. Anyone possessing a small garden might have a rich display in autumn, and Chrysanthemum growing, when once taken in hand, will not easily be given up. It is not always those possessing the best means who obtain the best results; the flower must be carefully studied, tenderly cared for, and success will follow in nine cases out of ten.

Having met with a fair amount of success, both as a cultivator and exhibitor, I will now proceed with what I believe to be the best mode of cultivation, and will first deal with plants grown for fine flowers. From the middle of December to the first week in January I consider to be the best time to commence propagation. As there are so many varieties cultivated, it is necessary for the beginner to make a selection of the best and most popular sorts before starting, which is easily done by noting down at the exhibitions those varieties generally staged by the most successful competitors, and I would advise growing only a limited number of sorts, according to requirements, two or three each of the best, rather than a host of uncertain varieties. I have tried several methods of striking, but have found the safest and best way is to devote to them a light or two of a pit divided by a temporary wooden partition, with hot-water pipes running through filled with finely sifted coal ashes as near the glass as the pots will allow. I much object to cold frames, although I am aware that many growers recommend them, for the reason, that owing to the bad weather we are likely to have at this season, it is necessary to keep them closed and covered, perhaps for weeks together, hence the cuttings must suffer from damp, and at the same time remain in almost dormant condition. To obtain satisfactory results, the plants should be kept in a healthy condition from the time the cuttings are inserted until the flowering season comes round. The soil to be used should consist of equal parts of light fibrous loam and leaf mould, with a good addition of sharp silver sand. Use large 60-size pots with a little moss or rough loam placed over the drainage to keep it clean and sweet. Fill the pots moderately firm, and place a little silver sand on the top. Insert four cuttings in each, which must be cleanly cut, and not rooted suckers, choosing the most sturdy; label, water, and place them in the pit already prepared. For a few weeks they will require but very little attention, except a sprinkle most mornings when the weather is bright.

Some sorts will be found to root much more quickly than others. These should be taken out as they commence starting into growth, and placed either in a cold frame or on a light airy shelf in the greenhouse. The whole stock should be ready for transferring into large 60-pots by the end of January or the first week in February. Arrange them in a cold frame facing south on a bed of coal ashes. The soil for this potting should be the same as before advised. Thoroughly water in, and keep them close for a few days, taking care to protect them from frost. Ventilate freely as the plants commence growing, and remove the lights on all favourable occasions during the day. Nothing tends to strengthen and keep them in good health like fresh air. By the last week in March they should be ready for 6-inch pots. The soil now should consist of two parts of good fibrous loam, one part well-decayed horse or cow manure, one part leaf mould, with a good addition of coarse sand and a few half-inch bones. Place a neat stake to each plant, and return them to the cold frame, treating them as before mentioned. At the end of April, if the weather is favourable, move them outside to a sheltered position, the foot of a south wall or fence will suit them admirably. Let them stand well clear from each other on slate or boards to keep the drainage perfect.

The final potting should be made the first or second week in June. I recommend 8-inch pots, which are large enough for all kinds, but a few of the strongest-growing may be placed in 10-inch pots. The compost for this potting should be three parts best loam, one part decayed manure, with a good addition of bonemeal. Drain well, using a thin layer of fibre taken from the loam over the drainage, which should be clean crocks and half-inch bones. If the soil is in a good state it is impossible to pot too firmly, using the potting stick freely, securing them with a longer and stronger stake before leaving the potting shed, and take them to wherever they are intended to remain for the summer months. The most suitable and convenient place, if to be had, is an open and airy position by the side of a walk where they get the full benefit of the sun during the whole day, and if neatly arranged and kept tied, they are far from being unsightly. Make them secure against the wind by driving in strong stakes a short distance apart, staining wire or strong string to fix the plants to. Syringe freely every fine afternoon. As the plants advance in growth, and as the pots become filled with roots, liquid manure must be applied at every other watering. Attend to thinning out the shoots, allowing but three or four to a plant, according to their strength and variety.

Taking the buds is a source of great anxiety even to the most experienced cultivators, as sorts differ so much as to the time it takes them to expand. Experience alone can make one perfect in this, but generally for those that are required about the middle of November, I have found the last week in August to the second in September the best time. From three to six flowers must be left if extra large blooms are desired, and the central bud always to be left. Disbudding should be performed by a steady hand and keen eye. A small pointed stick is what I use, taking them away when the buds are large enough, exercising great care not to damage the remaining bud. By the first week in October all should be safely housed, and when first taken in allow them as much room and air as possible. As they get acclimatised they may be stood as closely together as the pots will allow. When water is required always apply it in the morning. A little fire heat in damp cold weather will greatly help to improve the quality of the flowers, particularly the Japanese, and with a little top ventilation will act as a preventive against damping.

(To be continued.)

UNDER GARDENERS AND EXHIBITORS.

THERE are no doubt good and bad gardeners, but if we are to believe all that some of your correspondents say on this subject it would point to the fact that they are most extortionate men. My experience enables me to entertain quite a different opinion. I have served under several, and as a rule I have found them just and even generous. I am inclined to think the instances which "A Lover of Fairplay" has mentioned about young men having to pay their own expenses when assisting at flower shows are very rare. At the same time, a young man who is thoroughly interested in his work, and who keeps his eyes open, may find many a show worth paying a reasonable fare to see, and may be materially benefited by it in the future. As to night work, I think a man who objects to working an hour or two in the evening at a busy time, or to prepare for exhibitions, cannot enter into his work with the will and energy that is required to make a competent gardener of the present

day. The men who most object to it are not those who devote their spare time to study, but rather those who spend their time in idleness or questionable pursuits. I do not say this is always so, but generally speaking it is, and I fully believe the same rule applies to those whose lamentations are so loud at not receiving their share of prize money. Those who do least towards preparing things for show expect as much or more than those who do most.

It would seem by what an "Under Gardener" says that he considers it unlikely for a man to become a thorough gardener if he serves in places where exhibiting is carried on to any great extent. This I consider a very erroneous idea. Supposing a few things are grown superlatively well, as he terms it, is that any reason why everything else should of necessity be badly grown? I say, Decidedly not. Again, supposing in the early part of his career he was to serve a term where fruit-growing was the chief feature, in fact, grown well for showing, the next change he made—I think it good for a young man to change—was to a place where plants were largely grown also for show; does he mean to say that a man of that experience would not be as likely to prove as good an all-round gardener as one who had always lived in places where things were grown in just a presentable condition only? I think the former would be likely to prove the better man of the two.

Let us see, too, if there are not some other advantages likely to be gained by assisting a gardener in a subordinate position. I do not suppose there are many of us who always wish to remain subordinate. Then, who is the man most likely to assist you in gaining a responsible situation? The head gardener, as a rule. Which will he use the most influence for, then—the man who has assisted him to the best of his abilities, or the one who when asked to give a little extra help has either grumbled, or did it with a frown and in a manner which made his help worse than his absence would have been? Perhaps when he does gain that goal of bliss which an "Under Gardener" seems to think a head gardener's place is, it may happen his employer will be wishful for him to become an exhibitor, when he will probably find the knowledge he had previously gained in that respect as an assistant of great value to him. Supposing a head gardener does get the benefit of exhibiting in a pecuniary sense, as well as the bulk of congratulations, he has the greater portion of the anxiety in preparation, as well as the disappointment and expense if failure. One could hardly expect every friend of an exhibitor to come and congratulate each assistant that he may have at a show, and perhaps totally unknown to him. No, "Under Gardener," I cannot agree with you that exhibiting is detrimental to young men, quite the reverse; and if they are not to any great extent financially benefited by it, they can if they choose benefit in a way which is worthy of greater efforts than the majority of young men are willing to put forth in that direction. Many a man worthy of the good position he holds owes it to the fact of having lived in places which have become noted for their exhibits coupled with the influence of the gardener whom he helped to the best of his abilities.—ANOTHER UNDER GARDENER.



HARDY FRUIT GARDEN.

PRUNING FRUIT BUSHES AND PROTECTING THE BUDS.—But for the birds now is the best time for completing the pruning of both Currants and Gooseberries. The latter, however, are so liable to be stripped of the greater portion of their buds by bullfinches that many defer pruning till the spring, and we have known cases where market growers do what thinning is necessary when the fruit is large enough for picking. The more dense the growth the less likelihood of the buds being cleared off wholesale, but delaying pruning was of little avail last winter. The best course to pursue is to either prune the bushes, and then coat them with thin lime water and soot water applied through a syringe, or dusted over them when wet, or else to tie all the principal branches and young shoots up into a conical heap. Unless the bushes are very stubborn two men with gloves can so dispose the branches with the aid of tar twine as to make them almost impenetrable by birds, only a few of the outside buds being taken. The bushes are opened out just as the buds are bursting. Where this plan is tried light crops are the exception. If the bushes are coated with lime and soot this must be renewed whenever it is washed off by rains. Where a framework to support wire netting is erected over a quarter of fruit bushes, the ends at least should be moveable, so as to admit birds between the flowering and ripening periods, otherwise caterpillars do more harm than birds. Now is the best time to put up such permanent protections, and it should be kept closed in all the winter and spring. When pruning Gooseberries the best course is to lightly thin out the old wood and some of the young growths, and remove all that are near the ground. Young bushes to be cut freely back and the centre of those of erect habit kept open till such time as a good head is formed. Wall and trellis trees to have leading growths laid in wherever there is room, and all lateral growth spurred back to the main branches. The bushes also may have all young growth closely spurred back, but we prefer the plan of leaving a number of young shoots untouched, these usually fruiting to their entire length. Black Currants also bear fruit on the young shoots; thinning out and foreshortening the straggling branches in order to keep them within bounds is all that is necessary. Young trees need not be cut back after the second season, as these are constantly pushing young shoots. Fully formed Red Currant bushes, too, have all lateral growth spurred back to the main branches, and the leading shoots freely shortened back. Young bushes to be cut rather hard back, and the centres kept clear till such times as a good head is formed. The leading branches must be shortened back to a length of about 6 inches at each pruning, in order to clothe them with fruiting spurs.

CORDON APRICOTS.—This termed is employed for want of a better one to describe a system of training Apricot trees that ought to be adopted in gardens where they are apt to die off wholesale. We prefer the fan-shaped trees, but when these suddenly lose one or more of the main branches they are disfigured for life, and, what is still more regretable, other limbs soon follow suit. A wall can be most quickly furnished by trees trained with one main stem, the fruits being borne on the branches laid in right and left and treated very similarly to a Peach tree. The start should be made with well-ripened maidens, these being planted in fresh loamy soil not less than 6 feet apart, and trained obliquely in order to prevent the top of the tree from growing more vigorously than the lower branches. Cut them back to a length of about 2 feet, lay in side branches thinly, and one central shoot to continue the stem. Each winter the leader should be lightly shortened, and more side branches and a leader laid in during the summer, in which manner quite a high wall may be furnished in about four years. The trees being planted against a sunny wall and the subsoil well drained, the young shoots laid in thinly will usually flower and fruit freely the following season, and may then be cut out and their places taken by other growths purposely laid in during the summer. If they fail to fruit during the first year save them to the next.

PRUNING THE GRAPE VINE.—Plenty of good Grapes were ripened in the open air last season, and the wood also is much better ripened than usual. It is a mistake to closely prune them, for if spurred back as closely as those rods under glass, many of the laterals will fail to show bunches. Where possible lay in short lengths of young and well-ripened rods, as it is these that give the best bunches. This can frequently be done without destroying the old rods, the simplest plan being to tie a number of laterals along the rods or very near to them, these being replaced next season with other young rods reserved for that purpose. The spurs on permanent rods ought to be fully 12 inches apart. If it is decided to spur back the laterals cut to a plump bud, or say at the second or third joint. Permanent rods ought to be disposed 2 feet apart, and all should be securely fastened to the walls or trellises at the present time. No skinning or cleaning is necessary, but if mildew is troublesome dress them with a mixture of liquid clay, Gishurst compound, and sulphur. It is useless to attempt fruiting Grape Vines on other than hot sunny walls or roofs.

FRUIT FORCING.

PINES.—*Fruiting Plants and Starters.*—Those should now have a mean temperature of about 70°, varying it 5° according to external aspects, admitting air at 80° with sunshine, but not lowering the temperature, allowing the heat to rise to 85°, closing the house at 80°. Syringe all available surfaces twice every day, but do not syringe the surface of the bed between the plants. Avoid dense steam produced by syringing highly heated hot-water pipes. The plants also should be syringed occasionally early in the afternoon when the axils of the leaves become dry.

Starting Plants for Successional Fruiting.—About the commencement of next month (February) another supply of Queens should be started to supplement the supply of fruit from those plants which are already introduced for that purpose. Beds having hot-water pipes beneath them can soon be prepared for the reception of the plants, but it is not the case where fermenting materials alone are employed, hence the subject is mentioned now so that the matter may be seen to at once, and 85° to 90° of bottom heat secured by the time required. When plants which have been kept somewhat drier are to be started see that the balls of the plants are made thoroughly moist, so that with the extra warmth root-action may commence at once.

Successional Plants.—A night temperature of 60° to 65°, and 5° less in severe weather will be suitable for those, and 5° to 10° in the daytime according to external conditions. Keep the plants rather dry at the roots, but not excessively so, and when water is considered necessary give it thoroughly at a temperature of about 80°. Suckers should have a temperature of 55° to 60°, 60° to 65° by day from fire heat, and 10° more with sun heat.

CUCUMBERS.—The night temperature should be maintained at 65°, allowing 5° more in mild weather, whilst it may be 5° less on cold nights, 70° to 75° by day and 80° to 85° with sun heat. When the external air is mild a little ventilation may be given at 80°, closing before the temperature is reduced below that degree, so as to raise it to 90° or 95°; but if the external air is cold, although the sun shines, it is better to allow the temperature to advance a little beyond the above limits than to admit cold air, which injures the foliage, also causing the fruit to become stunted and to curl at the end. Plants in bearing will require to be examined about twice a week, removing all weakly and exhausted growths, reserving as much of the young bearing wood as is necessary to fill the allotted space, stopping the shoots at one or two joints beyond the

fruit. Young plants just coming into bearing should not be allowed to bear too soon, and by no means be overcropped. They are greatly assisted by removing the male flowers (also surplus female flowers) as they appear. The supply of moisture both at the roots and in the atmosphere must be governed by external influences. Syringing should not be practised over the foliage, exeept a light sprinkling in the early part of bright afternoons, damping the floor moderately at about 8 A.M. and 2 P.M. Encourage the roots to spread on the surface of the bed by adding a little lumpy loam from time to time, with which may be ineorporated a little well decomposed cowdung or fresh sweetened horse droppings. Keep a sharp look out for aphides, and fumigate several times moderately and consecutively rather than once severely. Canker is not uncommon at this season of the year; fresh slaked lime rubbed into the affected parts will arrest its progress. If mildew appear dust with sulphur.

Raising Cucumber Plants in Frames.—The greatest mistake is commencing too early. The materials are either not obtainable or they are not forthcoming in sufficient quantity to make up beds and continue the heat in them by linings, so as to keep the plants in progressive growth during weather tbat cannot be relied upon as assisting by sun heat; consequently those not sowing seed before the beginning of February cut fruit quite as early as some do with an inadequaey of heat-furnishing materiu by sowing at the new year. The material for making up the bed for raising the seedlings being in a fit state for turning over and mixing with leaves, so as to induce a sweet regular heat, a site for a bed should be chosen with full southern aspect, and having shelter to the north, as that of a hedge or wall. If the ground be rather higher where the bed is to be formed than the surrounding ground all the better. Beat the dung and leaves well down with a fork as the work proceeds, making the bed about 5 feet high at the back and 4 feet 6 inches in front, which will allow for settling, as it will do about a third. A few Pea sticks placed across and along the bed at intervals not only prevent overheating, but admit the heat from tbe linings being conveyed to the interior of the bed. For early work we have used frames with double sides with advantage. They are formed by placing an inner lining of half-inch boards 9 inches less in depth at the back and 6 inches less in front than the box, nailing strips of wood an inch wide and thick on the inside of the box, and then the boards whieh form an inch cavity all around the inside of the box, and thus top heat is furnished.

In about a week the heat will be up. Level the surfacc of the bed, replaee the box, and put in sufficient sweetened dung to raise the inside to within 4 inches of the top of the inner frame or eavity, placing sawdust, dry leaf soil, or spent tan on the dung for plunging the pots in. For raising the plants 3-inch pots are half filled with light rieh loam, placing one seed in the centre of each pot, covering with fine moist soil, so that no water is required for the germination of the seed. Space is thus left in the pots for top-dressing, which is preferable to potting the plants. A square of glass placed over the pots will hasten the germination, but it must be removed as soon as the plants appear. The plants from a sowing made early in February in the manner described will be ready for planting early in March, and will afford fruit nearly as soon as those from a sowing made early in January.

MELONS.—Add a little soil as a top-dressing as the plants grow, having them near the glass to prevent drawing. Keep a sharp look out for slugs. A ring of soot or lime placed round the plants will generally preserve them, but means should be employed to entrap the slugs. For frame culture seed should be sown early next month. The bed as described for raising Cucumbers is suitable for Melons, and should be made forthwith, unless one be made for Cucumbers, which will answer the sime purpose for raising Melons. Soil should be placed under cover, so as to become dried preparatory to forming it into ridges in the Melon house. Good loam rather strong than light is suitable for Melons, and if it has been laid up in ridges so as to reduce the turf it will be in a fitting state for the purpose. If deficient of grit add a fifth of road serapings, and if not calcareous a similar proportion of old mortar rubbish. If there is need to add manure nothing is better than fresh horse droppings. The composition would in that case be four parts of loam, one part each of horse droppings, road serapings, and lime rubbish.

STRAWBERRIES IN POTS.—When the plants commenee flowering admit air freely, remove the weaker blossoms, and when the pollen is ripe brush the flowers lightly with a feather. After the fruit is set thin them to about half a dozen, more or less according to the variety. Whilst the fruit is setting 50° to 55° will be sufficient heat artificially, advancing to 60° to 65° with sun heat, but after the setting is effected remove the plants to a house with a temperature of 60° to 65° artificially and 70° to 75° by day, supplying liquid manure until ripening eommences, then employ water only and sparingly. See that successional plants do not require water and are not brought forward too rapidly in the early stages. If there be any trace of aphides fumigate moderately, taking eare to have the plants perfeetly elean before they come into flower.

CHERRY HOUSE.—Beyond the necessary care in watering trees in pots and syringing the house with attention to ventilation, there will be little work at present, the temperature being kept at 40° at night, 45° to 50° by day by artificial means, ventilating at 50°, and allowing a rise of 10° to 15° from sun heat with full ventilation, elosing at 50°.

PEACHES AND NECTARINES.—*Earliest Forced Trees.*—Continue to fertilise the blossoms, using a camel-hair brush or feather, which is more effectual than shaking the trellis. When the fruit is well set syringing may be resorted to both morning and afternoon, but in dull weather syringing in the morning will be sufficient, damping the house in the afternoon, it being important that the foliage be dry before nightfall. The water employed must be of the same temperature as that of the house, the inside border being kept well supplied with water. Disbudding will soon require to be attended to, but it must be done carefully at this early season, it being better to remove a few shoots daily from a tree than many at a time at distant intervals, which last practice gives a cheek to the roots and is not favourable to the swelling of the fruits. The nigbt temperature may now be maintained at 55° to 60°, 60° to 65° by day, 5° less as the minimum when the weather is severe and dull, admitting a little air at 65°, not allowing an advanee over 70° without full ventilation, closing at 65°, always excepting a small space left at the top constantly.

Second Early Forced Trees.—Syringing must cease for trees started at the beginning of the month, when the blossoms show colour, but damping every available surface in the morning and afternoon must be practised, for though a confined atmosphere is not favourable to Peaches in any stage of their growth, a dry atmosphere is equally pernicious, promoting excessive evaporation, the blossoms equally with foliage and fruit being invigorated by atmospheric moisture, provided it is not stagnant. See that the border is in a thoroughly moist state, and make a close scrutiny of the trees for aphides. If there be any, fumigate the house on two or three consecutive evenings moderately, which will be sufficient to keep the pests under until the fruit is set. In case of an excess of blossom buds, and they are very abundant in our ease, and promising, draw the hand the contrary way of the growth along the under side or back of the trellis, so as to reduce the number of the bloom buds, which will increase the vigour of those best situated, and tend to a more even and better swelling of the fruit after setting.

Late Houses.—We should again urge the necessity of completing the pruning of the trees at once, dressing them with an insecticide, and tying the shoots to the trellis, the borders being forked over, but not disturbing the roots, any loose surface soil removed and fresh loam supplied, an admixture of wood ashes a fifteenth part, and a twentieth of half-inch bones being beneficial. If the borders are at all dry they should be given a thorough watering. Those, however, that have moveable roof lights will not require any water, the soil being in a thoroughly moist state from rain, and the shoots are kept in a condition by the air moisture unfavourable to evaporation, so that the trees not only have thorough rest, but the buds are prevented falling (a consequence mostly of deficiency of moisture at the roots). With the trees exposed we have not experienced any loss of buds, yet they may fall from other causes, such as over-maturity, or imperfect formation through attacks of parasites, and deficiency of aliment and assimilating power, resulting from too crowded a condition of the foliage.

PLANT HOUSES.

Marantas.—Repotting should be done at once where needed, so that the plants will have a chance of establishing themselves again before the sun has much power. If they are left till about the middle or end of the following month the sun often proves too strong for them, and they flag severely. These plants will do in the same pots for years provided the drainage is good and the soil about their roots in a sweet condition; but the liberal supplies of water needed during the growing season soon renders the soil unfit for them. They unquestionably do best when they are repotted annually. When turned out of their pots and the drainage removed the old soil should be worked from amongst the roots by washing it out in a tank of tepid water. This necessitates the plants being allowed to drain for some hours before they can be repotted. Many of the varieties do well in a compost of fibry loam, one-seventh of manure, charcoal broken according to the size of the plants and pots, with an addition of coarse sand. Others do better in rough peat, the fibrous portion of loam only, and charcoal in lumps. After potting plunge the plants where a night temperature of 65° can be maintained, syringe them freely, but water with great care until their roots are active. The pots used should be liberally drained.

Alocasias.—These may also be top-dressed or repotted if they need it, so that they will become established and be growing freely before the season is too far advanced. Those potted last year in peat fibre and lumps of charcoal freely intermixed should have the soil in good condition at their roots. They will only need the removal of the surface, top-dressing with rough material composed of peat, loam, and manure, which will induce the formation of roots from the stems, and thus add to their strength before the season is over. Those needing potting should have all the soil washed from their roots and fresh supplied. Drain the pots liberally, and cut off the lower portion of the stems if the crowns cannot be placed on a level with the rim of the pot. It is a mistake to elevate them much above the rim, for top-dressing cannot be well carried out after a season's growth. Sphagnum moss in the compost, except for covering the surface, should not be used, it decays too quickly, and assists the decomposition of the other ingredients of the compost, rendering annual potting a necessity. If good peat and charcoal only are used they will last well for two years. Destroy any red spider that may be on the foliage by sponging, and treat in other respects the same as advised for Marantas.

Anthurium Andreanum.—All plants that need repotting or top-dressing may be done at once. This, as well as A. ornatum, A. Ferrierense, and others do equally as well in loam from which the soily portion has been removed, charcoal and sand freely added as what they do in peat. Sphagnum moss, except for the surface, has long since been discarded as a requisite for these plants. They may not grow quite so rapidly in loam as what they do in a moss and peat mixture, but the growth is sturdier and the plants do not need cutting down so fre-

quently. They flower equally as well, if not better, and the flowers are brighter in colour. Those that are top-dressed may have a little manure applied to the surface. Plants that have grown too tall may be cut down. The heads will root freely if placed in the propagating frame in brisk heat. Every portion that has a sound eye upon it will make a plant. The old stool should be allowed to break, and frequently half a dozen or more shoots will issue from it, and the result is a splendid plant by the end of the season. After it has broken into growth the soil may be shaken from its roots and the plant placed in a smaller pot. Be careful to warm the soil thoroughly before these plants are repotted.

Bignonias.—Both evergreen and deciduous varieties must be well pruned, and from the former all unripe ends may be removed, except where the extension of the plants are needed. Treat in other respects the same as advised for Tecomas.

Cobæa scandens.—This and its variegated forms are such luxuriant growers that unless they are severely pruned annually and occasionally during the growing season, they smother all smaller-growing climbers that are near them. If well reduced in size they will in a very short time furnish the space allotted them with clean healthy foliage, which is preferable to leaving a large mass of old foliage upon the plants. As a rule, these grow in a very small quantity of soil without being top-dressed or fed during the season of growth.

Plumbago capensis.—Whether grown in a pot and trained upon a trellis, or planted out and trained to a pillar in the greenhouse or conservatory, they should be well pruned back. If a succession of bloom is appreciated place one or two of the plants that have enjoyed a good season of rest in an intermediate temperature until they break into growth. They may afterwards be top-dressed or repotted as the case may be. If any old foliage is left upon the plants be careful that no red spider exists upon them. It will increase rapidly with increased heat, and soon devour the young tender foliage after the plants have started into growth. If syringed with the solution advised for Lapagerias it will destroy any insects that may be upon them.

THE BEE-KEEPER.

THE STEWARTON HIVE.

FOREIGN RACES OF BEES.

In reference to this subject the following letter has been received, the reply to which is made the text of this article :—

"I am obliged by your last letter, to which I have delayed answering, as I thought you would be busy at the moors. As to your kind offer of the Syrian bees, I have a lively recollection of your description of their behaviour and the way they stung you awhile ago, and would not risk such an experience myself on any consideration. I am far from having the patience of Job, and suffer much when stung, so I hope you will not send me Syrians if they are dangerous and only fit for an expert. I trust you understand that I intend and wish to pay for what I obtain. I shall be very glad to take advantage of your offer to feed the bees, and perhaps you will kindly inform me whether the hive you propose to send is a frame hive, or of what description. Reading your description a few weeks back in the *Journal of Horticulture* of the strength your stocks attained when in full working order (requiring four body boxes) set me thinking whether the time has not come for a modification of the Stewarton pattern hive. Your skill, experience, and thorough knowledge of the subject gives your judgment great weight, and I shall be glad if you will consider the following points :—

"1, The foreign races of bees, such as the Syrian, Cyprian, Carniolian, &c., are much more fertile than the blacks, and consequently require much larger hives for their successful management.

"2, The Stewarton in its dimensions and form is an old hive, and was constructed to meet the requirements of the black bees, there being no others kept in Scotland then.

"3, Although the Stewarton is the very best hive for a moderate swarm, yet it loses that proportion which is one of its great recommendations when it becomes necessary to use four body boxes and five or six supers for one stock, as you have had to do—53 inches high with a base of only 14 inches appears to me to be an error.

"4, The octagon is the best form of hive after the circular (which is out of the question for wooden hives), but the proportion between base and height should be considered, and therefore as the size of the hive as a whole requires to be increased the base area must likewise be increased.

"5, I would therefore suggest that the Stewarton pattern hive should be increased in diameter to something like the enclosed plan. This would give ten bars instead of nine in the body boxes, and eight in the supers instead of seven, with only a fraction less than 2 inches each. It is not a perfect octagon, but the corners are cut off so as to allow the six centre bars to be full size. The internal superficial area will be increased from 160 square inches as at present to 215 square inches, or about 33 per cent., and three body boxes will contain about 3900 cubical inches, equal to four of the present size.—F. J. J."

[1, "F. J. J." is quite correct, all the foreign races of bees mentioned are more prolific than the common black bee, and require much larger hives, and in many instances different treatment. The failure of many bee-keepers is owing to their persistency in keeping their bees in too small hives, which results in want of bees to gather honey, the evil being further aggravated by excessive swarming and the deposition of queens at an improper time, and often where it is most important, that swarming should not take place.

2, The Stewarton hive is practically unlimited in its capacity, as any number of divisions may be used suitable to strength of stock and fertility of queen, no matter what the breed may be. Since the days of "Bee Robin," who was both bee-keeper and joiner, many makers of the Stewarton hive were not bee-keepers, having but an indefinite knowledge of bees and bee-keeping, sent out these hives incomplete as is in some cases done yet, and without proper instructions, often none at all, hence so many failures. Then, for some years past, manufacturers not up to the making nor working of these hives, found it answered their purpose better to make square ones, recommending the latter and condemning the former without the knowledge of its merits.

3, When a Stewarton hive attains to the height of from 4 to 5 feet its weight is a sufficient guarantee that it will not topple over unless in an extremely severe storm that may occur during the honey season. We have never experienced storms at home that capsized hives during summer. Sometimes I have stretched guy cords as a precaution, but never saw the use of that. It was different, however, at the moors; having to contend against both winds, stray cattle, and sheep, and being often confined to little space, I used to place my hives in threes upon notched crossed stands, and lashed the hives to these so that they stood secure. These stands were made from five pieces of timber about 4 inches broad, one piece long the other short to suit the size of the hives, are notched together forming a right angle, then three shorter pieces are notched into the ends, forming a triple stand similar to the notched stands sold by dealers as the "cheapest, best, and simplest kind of stand ever invented." It has been used here by me for upwards of thirty years, and I had them in use in my apiary in 1875, when the person who claims the idea visited me before he invented the said stand. Probably the visit to me helped him in that as it did on the same occasion when comb foundation was condemned by him and his companion as worthless. I relieved them both of that notion.

It will be observed a stand of that description prevents the hives looking all in one direction, but if one is made to look due east, another may look south-east, and the third one may look due south. I have had my hives in fours, but it was objectionable owing to the impossibility of standing behind all the hives when manipulating. The triple stand has not that objection, and the hives can be lashed to it and together to prevent capsizing as easily as if it was a quadruple stand.

4, This seems a reasonable suggestion in theory, but not in practice. The increase of one bar only adds greatly to the superficial measure, thereby detracting from the properties of the original form of the Stewarton hive for profitable working. I had a number of such hives made, but as they disappointed me I gave them all away. Clumping hives in threes as described overcomes the difficulty and danger of capsizing.

5, The great difficulty bee-keepers have to contend against is our variable climate, hence also is the difficulty of having hives exactly to our mind. The hive as suggested is exactly similar, except the angles, to those I parted with. In some seasons they eclipsed the original form of hive, but were oftener a failure; they do not winter the bees so well, nor are they so well adapted for supering as the narrower and more compact form. It takes a long series of years to arrive at a proper conclusion what form a hive should be, as well as the mode of management. In some seasons a very indifferently managed apiary will give large returns, and when this occurs the bee-keeper jumps to a conclusion, based upon imperfect ideas and opinions, which his injudicious treatment (although once in a time fortunate) was sure to be disappointing and unprofitable in the end, arising through a misunderstanding that led to success. We do not require to go far to seek truth to support that statement. We have only to turn our eyes to much of the bee literature for ten or twelve years past; there we find leaders jumping from one style of hive and system of management to another, thereby leading people into expenses and disappointment. But at last, as the truth is forced upon them, another change is made; but lo! what do we find? Instead of either hive or system of management being new, it is but an appropriation of old ideas. The truth of the above has only to be searched for in older literature, and will give the reader a glimpse into the unfairness and unjustness of some of our great bee-men of the present day.—A LANARKSHIRE BEE-KEEPER.]

TRADE CATALOGUES RECEIVED.

William Fell & Co., Wentworth and Fellside Nurseries, Hexham.—*Spring Seed Guide, 1888.*

William Bull, 536, King's Road, Chelsea.—*A Catalogue of Select Flower and Vegetable Seeds, 1888.*

R. H. Poynter, Castle Green, Taunton.—*Annual Seed List, 1888.*

G. Bunyard & Co., Maidstone.—*Catalogue of Vegetable, Garden, and Flower Seeds.*

Fisher, Son, & Sibray, 4, Market Street, Sheffield.—*Catalogue of Kitchen Garden and Flower Seeds, 1888.*

W. Drummond & Sons, 58, Dawson Street, Dublin.—*Catalogue of Vegetable and Flower Seeds, 1888.*

William Baylor Hartland, 24, Patrick Street, Cork.—*Year Book of Seeds for the Season 1888.*

H. Cannell & Sons, Swanley, Kent.—*Floral Guide for 1888 (Illustrated) and Complete Kitchen Garden Catalogue.*

Dobie and Mason, 66, Deansgate, Manchester.—*Catalogue of Seeds.*

Agricultural and Horticultural Association, One and All Wharf, Creek Road, Deptford, S.E.—*Vegetable and Flower Seeds, 1888.*

Biddles & Co., Loughborough.—*Illustrated Catalogue for 1888.*

TO CORRESPONDENTS

*** All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at onee. All artieles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Primula sinensis variety (*T. F.*).—The variety of which a flower is sent is an excellent one, and more nearly resembles Princess of Wales than any we know, though it appears quite distinct from that. The flower is massive, 2¼ inches in diameter, of a soft, clear pink colour, and a bright pale-green eye. It is well worthy of preservation and increase.

Glass for Greenhouse (*G. B.*).—You had better have 21 oz. glass, not lighter, and for ordinary purposes of growing plants and flowers for sale third quality will answer, though a grade higher, or "seconds," is better, and necessarily a little more costly. It has been recently advertised by Mr. J. B. Robinson, Moor Lane, Cripplegate, London, who will supply what you require.

Mushrooms (*W. B. R.*).—Answers in this column are only intended for regular subscribers, and to such they are freely given and as fully as is requisite to be useful. That is general information. To answer your questions fully would cost ten times more than the charge for the paper; therefore they are answered briefly. 1, Not with good materials in the hands of a competent man; 2, Not if the whole is much broken; 3, Advertise.

Imperator Potato (*J. B. Hythe*).—There is little doubt but that this is one of the best Potatoes for market during the winter and spring months. It is correctly described on page 510, December 15th, 1887, and the tubers are of very good quality. It will grow in any soil in which late Potatoes usually thrive, but if very rich or much manure is used many of the tubers are apt to grow too large. It is found by experience that less manure suffices for producing a good yield of marketable tubers of Imperator than for most other late varieties. It will be extensively planted this year in some of the large Potato growing districts in the north of England.

Purple Laburnum (*J. H. V.*).—As a rule the racemes of the purple are not so long as those of the best of the yellow Laburnums, but are often produced in clusters; and still smaller clusters of buff-coloured flowers are also like to issue from the trees. We once planted twenty-four trees, and only one of them bore purple flowers exclusively, and though these were of a fair size they did not equal those of the Wistaria, and were duller in colour. We do not consider the purple so effective as the yellow, but it is more rare. A deciduous flowering tree for arresting the attention of passers-by, excluding as you wish Cherries, Hawthorns, and Peaches, is Pyrus Malus floribunda.

Forcing Asparagus (*H. A.*).—The subject has been frequently alluded to during the present forcing season, and possibly you may find the information you require on page 435, the issue of November 17th, 1887. All you have to do is to pack the roots closely together before they get dry on any moist base, resting them on a layer of soil and covering them and the crowns with any light compost, such as leaf mould, giving a good watering. They grow quickly with a bottom heat of about 80°, and top heat of 60° or 65°, affording produce in about a fortnight. Roots should be put in at intervals of about a fortnight for maintaining a regular and prolonged supply. A pit in the stove will be very suitable, where the growths can have light.

Daphne Dying (*A Taunton Subscriber*).—The cause of death is apparent on an examination of the plant sent. In the first place the stock was faulty, not clean, healthy, and, to employ a grafter's term, "kind;" and in the second place the union of the scion with it was not good, and the descending sap could not pass down below the junction, but exuded there, forming a large callosity. If this had been buried in the soil roots would in all probability have issued from it, and supported the plant at least for a time, but it is scarcely likely it would have grown into a healthy specimen. The top of the stock ought to have been cut slantingly up to the base of the scion, nor left flat and square for holding and absorbing wet, thus causing decay.

Raising Conifers from Seed (*W. M.*).—Seed gathered in the autumn and sown in the open ground in sandy soil during fine weather in March will germinate in a few weeks; but any of choice varieties is best with the protection of a light frame, sowing in a mixture of very sandy loam and leaf soil, taking care that it is kept uniformly moist, and to afford adequate ventilation when the seedlings appear for keeping them sturdy. We do not know to what species you refer under the name of the "Welsh Pine," but possibly some of our readers may be able to distinguish the tree thus named; or if you send sprays and a cone we may perhaps be able to identify the species. The popular name cited is, we think, local. An agent to whom you may apply is Mr. C. Bates, 24, Mark Lane, and R. Silberrad & Son, 25, Savage Gardens, E.C.

Vine Roots Decayed (*R. W.*).—We remember receiving and examining some Vine roots a few weeks ago, but received no letter referring to them. These may or may not have been yours. We could not find any traces of the phylloxera, and we thought the roots had come in contact with some corroding substance in the soil. We have seen good and not ill effects from the use of Beeson's manure, though it would no doubt be a mistake to use it in excess; but so far as we know it is safe when the instructions of the vendors are followed. Not knowing the weight of the quantity used we can scarcely form an opinion of its possible effects in your case, but should not think it was the cause of the damaged state of the roots, assuming those we examined were sent by you.

Chemical Manures for Fruit Trees (*W. J.*).—Of the ingredients you name 2 cwts. each muriate of potash, superphosphate of lime, steamed bone flour and gypsum would form a good mixture for applying to the soil for the support of Vines and fruit trees generally, dressing with sulphate of ammonia subsequently it needed, its quantity being regulated by the condition of the trees or Vines, an excess causing exuberant and sappy growth. If mixed with the other kinds ½ cwt. would be ample. You will not err by using muriate instead of nitrate of potash to garden or farm crops. Having regard to the outlay invested in both, the former has proved the more satisfactory in many experiments, though possibly there may be a few exceptions not known to us.

Fungus in Vine Border (*A. W. C.*).—The fungus is common in leaf soil containing woody matter, such as the twigs and branches of trees, also in spent tan, and its presence in the Vine border may be due to the pieces of laths introduced with the lime rubbish. You cannot do better than proceed as you are doing—*i.e.*, removing as much of the decaying woody matter and white fungoid mass as possible, being careful not to injure the roots. Dusting with fresh slaked lime will be highly beneficial alike in hastening the decay of the woody matter and converting the nitrogenous substance of the fungus into nitrate of lime, which will act beneficially on the Vines. You may also add dry wood ashes to the lime, an equal proportion of each, applying the mixture as the renewal of the soil is effected; thereby potash will then be afforded, which with the fresh soil cannot prove other than advantageous to the Vines

Seeds Required for Garden Plots (*B.*).—The following seeds and space the quantities named may occupy has been determined by experiments, the seeds being good and uniformly covered at a proper depth in suitable soil:—Asparagus, bed of 15 square yards, ½ pt.; Beans, Broad, per row of 80 feet, 1 qt.; Beet, row of 50 feet, 1 oz.; Broccoli, per 4 square yards, ½ oz.; Brussels Sprouts, per 4 square yards, ½ oz.; Cabbage, bed of 8 square yards, ½ oz.; Carrots, drill of 120 feet, 1 oz.; ditto, bed 12 square yards, 1 oz.; Cauliflower, 4 square yards, ½ oz.; Celery, 4 square yards, ½ oz.; Cress, 3 square yards, 1 oz.; Endive, 4 square yards, ½ oz.; Kale, 4 square yards, ½ oz.; Kidney Beans, row 80 feet, ½ pint; Leek, 2 square yards, ½ oz.; Lettuce, 4 square yards, ¼ oz.; Mushroom, 7 square yards, 1 bus.; Onions, 9 square yards, 1 oz.; Parsley, row 80 feet, 1 oz.; Parsnip, drill of 200 feet, 1 oz.; Peas, early, row of 60 feet, 1 pint; Peas, large, late, row of 80 feet, 1 pint; Potatoes, row of 30 feet, ½ pkt.; Radishes, 4 square yards, 1 oz.; Savoy, 4 square yards, ½ oz.; Spinach, 10 square yards, 1 oz.; Spinach, drill of 120 feet, 1 oz.; Turnip, 4 yards square, ½ oz.

Pruning Peach Trees (*F. J.*).—It is better to arrange the main branches wide enough apart to permit a selection of the summer growths being laid in between them, not topping them till the beginning of September, if then; but disbudding is essential to prevent overcrowding, or the foliage of one shoot materially overlapping and shading the others. The growths then ripen and triple buds form nearly their entire length, the centre one being a blossom bud. The requisite number of shoots should be laid in annually, and no more, to permit of much of the wood that has borne a crop being cut out after the fruit is gathered. The process has been plainly described many times in our "Work for the Week" column, and not long ago. It will be referred to again in time to be of service. Peaches are pruned in the spring, the spur system answering fairly well in very favourable positions, but we do not remember having advised you to adopt it. Prune to triple buds, if any, on ripe wood when the blossom buds show colour. Undoubtedly chemical manures are good for lawns, so is soot. If you mix superphosphate of lime and sulphate of ammonia at the rate of 4 lbs. of the former to 1 lb. of the latter, and sprinkle about 2 ozs. on each square yard in February, it will do your lawn good. The formula to which you refer

has been so often given that we must leave it to our correspondent to give it again when the subject comes under discussion in the ordinary course of routine.

Inarching Alicante on Foster's Seedling Vine (*B. K.*).—The inarching of Black Alicante on Foster's Seedling will tend to an earlier maturing of the Black Alicante, which will succeed in the same house with Black Hamburghs where artificial heat is employed at starting and during the early stages of growth, also during the ripening period, should the weather at that time prove unfavourable to the ripening process. There is no better keeping Grape for growing in the same house with Black Hamburgh than Black Alicante, its quality being generally superior to Gros Maroc, which, however, is a very "showy" Grape, and would no doubt succeed well on Foster's Seedling, ripening with the Hamburgh; but Black Alicante requires a little more time to mature. Lady Downe's will also succeed along with Hamburghs, but it is liable to scald unless kept rather warm and freely ventilated towards the close of the stoning period, being safe from that scourge after the Grapes commence ripening. It is the best of all long-keeping Grapes, and is decidedly superior to any late, thick-skinned varieties except Mrs. Pince, which, grown well, which it seldom is, is first-rate in quality. For your purpose we advise Black Alicante. It would be best to inarch a young cane of Black Alicante on to the Foster's Seedling, preferably to a good lateral near the bottom of the Vine rather than on the old wood. Victoria Hamburgh is synonymous with Frankenthal, which is very much confounded with Black Hamburgh, indeed many of the so-called Hamburghs are Frankenthal. It is a very good Grape, than which no better evidence is needed than yours—viz., "I have had good Grapes from the Vines every year." It would be well to allow both the stock and scion to start into growth before inarching, especially the former; indeed, you may crop the Foster's Seedling this year, but keeping the laterals well in hand, encouraging growth in the Black Alicante by permitting its laterals to remain, cutting away the Foster's Seedling so soon as the crop is cut. The union will be effected in about six weeks after inarching. You would find Barron's "Vines and Vine Culture" valuable for reference, and it can be had from this office, price 5s.; post free 5s. 3d.

Improving Neglected Garden (*R. S. O.*).—You could not have done better than in sparing no pains in eradicating the weeds, it being an essential in good husbandry that the resources of the soil be reserved for useful crops. The couch and bindweed should be forked out, and then there is a prospect of the soil being utilised—giving a good return as it always does for intelligent cultivation. Burning the weeds and returning the ashes to the soil will have an improving tendency through acting mechanically on its texture, and also as manure. The trenching would also tend to improve the soil's texture. There is no fear of the dung applied in the trenches being lost—it failed in being appropriated last year through the drought. We presume the good soil has been kept near the top, or, at least, the soil has been well mixed. In trenching the mistake is sometimes made of burying the good surface soil under poor and stubborn material. In that case either much manurial matter must be applied to get it into heart, or long exposure is necessary to bring it into a fit state for crops, but we note none of these defects in your method, and think the procedure you have followed upon certain to bring its reward in due season. In the absence of manure you may have recourse to nitrate of soda, muriate of potash, and superphosphate. Of nitrate of soda 1½ cwt., nitrate or muriate of potash (the latter preferably) 1½ cwt., superphosphate of lime 4 cwt., would be an excellent dressing for one acre. They should be procured separately, and mixed as required, applying just prior to putting in the crops. A pound of nitrate of soda, the same of muriate of potash, and 2 lbs. of superphosphate will be suitable for a rod (30¼ square yards). The quantity is heavy, but yours is a particular case and needs more radical treatment than had the soil been in fair heart. You can supplement those by dressings of soot after the crops are fairly established, applying a peck per rod, or 40 bushels per acre, employing it during moist weather, one application being sufficient for each crop. As your soil is strong, mulching with anything calculated to prevent evaporation, such as grass mowings, &c., will be useful for such crops as Peas, &c., indeed anything to which moisture is an essential. Such soils are liable to bake and crack under powerful sun.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials suffice for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*J. R.*).—1, Cox's Orange Pippin; 2, Blenheim Pippin; 3, Flanders Pippin; 4, Mère de Ménage; 5 and 6, Not known.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. A correspondent whose name has been mislaid sends long fronds of the following Ferns:—1, Asplenium diversifolium; 2, Nephrolepis tuberosa; 3, Polystichum aculeatum; 4, Polypodium aureum. (*R. S. T.*).—A good variety of Dendrobium nobile. (*W. P.*).—1, Anthurium Scherzerianum; 2, Asparagus plumosus; 3, Rhododendron javanicum. (*J. L.*).—1, Cypripedium venustum; 2, Tydæa Madame Heine; 3, Selaginella uncinata; 4, Adiantum amabile; 5, Adiantum assimile; 6, Selaginella cauleseens.

COVENT GARDEN MARKET.—January 18th.

Market quiet, with good supplies.

PLANTS IN POTS.

	s.	d.		s.	d.
Aralia Sieboldi, dozen ..	6	0	to	12	0
Arbor vitæ (golden) dozen	6	0		9	0
„ (common), dozen ..	0	0		0	0
Azalea, dozen	24	0		42	0
Begonias, dozen	0	0		0	0
Chrysanthemums, dozen	9	0		18	0
Cineraria, dozen	10	0		12	0
Cyclamen, dozen	12	0		24	0
Dracæna terminalis, doz.	30	0		60	0
„ viridis, dozen ..	12	0		24	0
Epiphyllum, dozen	10	0		18	0
Erica, various, dozen ..	9	0		18	0
Euonymus, in var., dozen	6	0		18	0
Evergreens, in var., dozen	6	0		24	0
Ferns, in variety, dozen	4	0		18	0
Ficus elastica, each ..	1	6		7	0
Foliage Plants, var., each	2	0		10	0
Fuchsia, dozen	0	0	to	0	0
Hyacinths, dozen	9	0		12	0
„ (Roman), doz.	9	0		10	0
Hydrangea, dozen	0	0		0	0
Lilies Valley, dozen ..	18	0		24	0
Lilium lancifolium, doz.	0	0		0	0
„ longiflorum, doz.	0	0		0	0
Marguerite Daisy, dozen	9	0		12	0
Mignonette, dozen	0	0		0	0
Musk, dozen	0	0		0	0
Myrtles, dozen	6	0		12	0
Palms, in var., each ..	2	6		21	0
Pelargoniums, dozen ..	0	0		0	0
„ scarlet, doz.	8	0		12	0
Poinsettia, dozen	12	0		15	0
Solanum, dozen	9	0		12	0
Tulips, dozen pots	6	0		9	0

CUT FLOWERS.

	s.	d.		s.	d.
Abutilons, 12 bunches ..	3	0	to	6	0
Anemones (French), 12 bunches	3	0		4	0
Arum Lilies, 12 blooms ..	5	0		8	0
„ French, bunch ..	0	0		0	0
Asters, 12 bunches	0	0		0	0
Azalea, 12 sprays	0	8		1	0
Bouvardias, bunch	0	6		1	0
Camellias, 12 blooms ..	3	0		4	0
Carnations, 12 blooms ..	1	0		3	0
Christmas Roses or Hellebore, 12 blooms ..	0	6		2	0
Chrysanthemums, 12 bchs.	15	0		24	0
„ 12 blooms	2	0		4	0
Cyclamen, 12 blooms ..	0	6		1	0
Daisies, 12 bunches ..	2	0		4	0
Epiphyllum, 12 blooms ..	0	6		0	9
Eucharis, dozen	4	0		6	0
Gardenias, 12 blooms ..	0	0		0	0
Hyacinths, Roman, 12 sprays ..	0	6		1	0
Iris, 12 bunches	0	0		0	0
Lapageria, white, 12 blooms	2	0		3	0
Lapageria, coloured, 12 blooms	1	0		1	6
Lilium longiflorum, 12 blooms	6	0		9	0
Lilies, White, 12 bunches	0	0	to	0	0
„ Orange, 12 bunches	0	0		0	0
Lily of the Valley, 12 sprays	0	9		1	6
Margnerites, 12 bunches	2	0		6	0
Mignonette, 12 bunches	3	0		6	0
Narciss, white (French) 12 bunches	3	0		9	0
Pelargoniums, 12 trusses	1	0		1	6
„ scarlet, 12 trusses	0	6		0	9
Poinsettia, 12 blooms ..	4	0		8	0
Primula (single), bunch..	0	6		0	0
„ (double), bunch ..	0	9		1	6
Polyanthus, 12 bunches..	0	0		0	0
Ranunculus, 12 bunches	0	0		0	0
Roses, 12 bunches	0	0		0	0
„ (indoor), dozen ..	3	0		4	0
„ Tea, dozen	1	6		6	0
„ red, dozen (French)	1	6		3	0
„ yellow	6	0		9	0
Stephanotis, 12 sprays ..	0	0		0	0
Tropæolum, 12 bunches	2	0		3	0
Tuberoses, 12 blooms ..	1	0		1	6
Tulips, dozen blooms ..	0	9		1	6
Violets, 12 bunches.. ..	1	0		1	6
„ (French), bunch	1	9		2	3
„ (Parme), bunch	5	0		7	
White Lilac, per bunch ..	6	0		7	

VEGETABLES.

	s.	d.		s.	d.
Artichokes, dozen	1	0	to	2	0
Asparagus, bundle	0	0		0	0
Beans, Kidney, per lb. ..	0	6		0	0
Beet, Red, dozen	1	0		2	0
Broccoli, bundle	0	0		0	0
Brussels Sprouts, ½ sieve	3	6		4	0
Cabbage, dozen	1	6		0	0
Capsicums, per 100 ..	1	6		2	0
Carrots, bunch	0	4		0	0
Cauliflowers, dozen ..	3	0		4	0
Celery, bundle	1	6		2	0
Coleworts, doz. bunches	2	0		4	0
Cucumbers, each	0	6		1	0
Endive, dozen	1	0		2	0
Herbs, bunch	0	2		0	0
Leeks, bunch	0	3		0	4
Lettuce, dozen	0	9	to	0	6
Mushrooms, punnet ..	0	6		1	0
Mustard and Cress, punt.	0	2		0	6
Onions, bunch	0	3		0	0
Parsley, dozen bunches	2	0		3	0
Parsnips, dozen	1	0		0	0
Potatoes, per cwt.	4	0		5	0
„ Kidney, per cwt.	4	0		0	0
Rhubarb, bundle	0	2		0	0
Salsafy, bundle	1	0		1	6
Scorzonera, bundle ..	1	3		0	0
Seakale, basket	1	0		1	3
Shallots, per lb.	0	3		0	0
Spinach, bushel	1	6		2	0
Tomatoes, per lb.	0	6		0	10
Turnips, bunch	0	4		6	0

FRUIT.

	s.	d.		s.	d.
Apples, ½ sieve	1	6	to	3	6
Nova Scotia and Canada barrel	10	0		18	0
Cobs, 100 lbs.	55	0		0	0
Grapes, per lb.	1	0		3	0
Lemons, case	10	0		15	0
Oranges, per 100	2	0	to	5	0
Pears, dozen	1	0		1	6
Pine Apples, English, per lb.	0	0		0	0
St. Michael Pines, each	3	0		5	0



LAMBING TIME.

Early or late lambing is very much a matter of expedieney, for there are local circumstances which must always be taken into account. A fine batch of forward fat lambs ready for market a week or so before Easter is always profitable; certain butchers and salesmen must have them at any price for fashionable customers, and they often realise double the price of lambs sold a few weeks later in the season. This is a matter, however, somewhat outside the general question, for if farmers generally were to press Easter lambs upon the market, prices would certainly come down. Shelter

and food are perhaps the two most important factors worthy of attention as affecting final results. Given enough of both we cannot well have lambs too early, but our system of flock management must be well digested and our plans elaborated for the entire year.

We saw a large flock of ewes a few days ago upon an absolutely bare pasture, where they were having trough food and Mangolds, but they could get no grass, for the herbage was eaten off closely, and the ewes had evidently been on short commons. If this was the case at the beginning of January, what will it be if we have a late spring? Why, the flock will either have to be sold outright, or both ewes and lambs will be very low in condition. We have a large surplus quantity of Mangolds, and we have ample reason to expect 20s. a ton. for them by the end of February, when many a flockmaster will be eager to buy. Anything like a fair profit upon the progeny of underfed ewes is a very doubtful matter, or rather we should say is not doubtful, for we know it is not to be had Again we say, if the animals of the farm are to be bred profitably they must be well fed from the birth. Let any of our readers having a flock look closely into the condition of it, and if it proves to be too numerous for the means at their disposal there should be a reduction in the number when it can be done without a serious sacrifice. Season after season do we see ewes with very young lambs sent to the auction mart to be sold for what speculators care to give. The loss upon such a transaction is greatly to be deplored, because it might so easily have been avoided by the exercise of a little forethought.

There can be no doubt that many farmers are much concerned just now about the provision of food for the flock, and it is equally certain that many of them have an ample store of food by them of which they do not avail themselves simply through ignorance of its value.

Roots, roots, is their cry for sheep food in winter, yet we know by analysis that straw contains twice the proportion of fat and flesh-formers to that contained in any root crop, and we have only to chaff it to render it suitable for sheep food. If we have occasion to render the dietary a little more nourishing, a moderate addition of Oats will answer the purpose admirably, for, subject to the crucial test of analysis, Oats are known to contain at least ten decimal parts more of fat and flesh-formers than the best linseed cake. If, then, we require a perfect nourishing sheep food we have only to chaff unthreshed Oat sheaves, and we have it. In point of fact both economy and utility tell us to mix some chaffed Barley straw with the chaffed Oats to avoid waste by the use of too nutritious food. Why will farmers continue running up heavy cake bills when they have it in their power to avoid them? Why, also, should an undue proportion of farm land be under roots? It is well known that root crops are exceedingly costly and speculative, and if we can avoid much of the outlay hitherto incurred in the cultivation of such crops we are bound to do so. So many bullocks and sheep and so many acres of roots has been an article of faith with farmers for a long time. We may now advantageously discard the bullocks and dispense with two-thirds of the roots. Only let us take care to increase the acreage of pasture and green crops sufficiently to insure enough green food at all seasons of the year for the sheep, and then with plenty of the trough food we recommend we may very well dispense with most if not all of the roots.

The lessons of adversity are teaching us many useful things. We may fairly claim to be successful in farming even now, but we are not content with bare success, and are constantly on the alert to effect really useful reforms in our practice. The present lambing season is certainly an opportunity for doing so, and we intend taking the dietary of the lambs entirely into our own hands. We have shown that it is our practice to begin giving the lambs some trough food as soon as they can take it, and we intend trying a mixture of coarse Oatmeal and bran, with a slight addition of salt at the outset this season. All that the lambs require is sound, finely divided, nourishing farinaceous food, and by the aid of a little common sense we think a farmer ought to be able to prepare such food from home-grown produce. It is claimed for special mixtures that they possess important medicinal properties which tend to keep the lambs sound and healthy. We know that a little Fenugreek imparts a savoury aromatic flavour to such mixtures, and we strongly suspect that some such addition is all that specialists use in the way of drugs.

(To be continued.)

WORK ON THE HOME FARM.

So far the winter has proved to be favourable for work on the land. But little snow has fallen, frost has not been severe, and the land is not sodden by rain, so that ploughing has gone on with but little intermission save when the horses have been required for the carting of corn. For us this is most fortunate, as in addition to our ordinary farm work some three hundred acres of exhausted land came upon our hands at Michaelmas, and we have still got much of it to plough. We have, however, finished ploughing the home farm, and have sent off all the horses and ploughs thence to help plough the poor land. Unfortunately for us this poverty-stricken farm is also very foul with couch grass, and our work upon it this year will be of an arduous nature. It is almost disheartening to have to take such land in hand, more especially for us, as we had just got the farms in hand into good order, and they were showing a handsome margin of profit. Landlords' farming is often spoken of by tenant farmers as certain to fail, and we shall have something to say about that very soon. We as a landlord's agent have proved farming to be so profitable that it is a moot point whether to let any more farms at the very low rents now offered by prospective tenants. This thought occurs to us with especial force just now, as we have had the accounts of all the farms under our care balanced, and we find a decided improvement during what has been termed the worst year that farmers of our day have known.

Our readers know full well how we have repeatedly pointed out for their guidance what to avoid and what to do in farm management. We now mention something of the result of our work to show how thoroughly in earnest we are, for before all things we are bound to be practical, and we cannot afford to indulge in untried theories which may or may not succeed under the test of practical application. With bad or good land we have done all we could to turn it up roughly to the action of frost, snow, rain, and wind. We began doing this immediately after harvest, and when the winter corn was sown the ploughing was pushed on as fast as possible, but we could not get all of it done before the end of the old year as we so much wished to do. We have said that the land is not sodden by rain; in proof of this we may mention the fact that soil ploughed a few weeks ago has quite recently been thrown into ridges without any difficulty.

THE HESSIAN FLY AND ITS PARASITES.

OBSERVATIONS upon the Hessian fly, so-called, or properly Cecidomyia destructor, made in North Britain, brought to light the fact that it has not reached our island without being accompanied (or followed) by several of its minute parasitic enemies. Probably it is in some measure due to the proceedings of these that it has not extended itself over a larger area in those districts where it first appeared. One of the most curious facts is, that these parasites have been verified as occurring in Russia chiefly, at least four of the species; the fifth has been recorded in America, but in Germany also. This rather supports the theory that the recent visitation came to us through imports from Russia.—ENTOMOLOGIST.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				
1888. January.	Barometer at 32° and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature.		Radiation Temperature		Rain
		Dry.	Wet.			Max.	Min.	In sun.	On grass	
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 8	30.511	47.1	46 8	W.	31.9	51.8	43 3	51.1	39.4	—
Monday..... 9	30.692	43 6	43 6	N.W.	40 7	45.8	43.4	54.8	4[illegible]	—
Tuesday 10	30 736	33.9	33.9	Calm.	40.6	45 6	33.2	48.1	29.4	—
Wednesday.. 11	30.685	35.3	35.3	Calm.	39 3	38.2	32.0	38.4	29.1	0.012
Thursday 12	30.649	34 7	34 7	N E.	39.0	38 3	34.3	38.3	34.1	—
Friday 13	30.675	36 2	36.0	N.E.	38 9	37.9	34.1	38.8	34.8	—
Saturday 14	30.562	31.3	31.1	Calm.	38.7	35.6	29 7	36 2	30.1	—
	30.644	37.5	37.3		39.5	41.9	35.6	44 2	34.0	0.012

REMARKS.

8th.—Generally overcast, but fair at times.
9th.—Thick white fog except at mid-day.
10th.—Fog more or less all day; dense till 11 A.M., and very dense in the evening.
11th.—Dense fog all day.
12th.—Fog, dense at times in the morning; fair afternoon.
13th.—Overcast day, slightly foggy at times.
14th.—Dull, with varying fog.

A very dull and rather foggy week, with very high barometer, and, of course, little wind, and equable temperatures. No rainfall but deposition of wet and dirty fog. —G. J. SYMONS.

GARDEN PRODUCE.

SIZE v. QUALITY.

NO, Mr. "Spectator," I will not take the text you have selected for me, but will take one from your own book—"Many if not most gardeners grow the produce of gardens too big by half." The charge of mine to which I am referred for a text was preferred more against the public taste for things merely large ; his charge is against gardeners for making an ideal of large productions instead of finer qualities. This charge may have a double meaning, or may be interpreted in two different ways. Either your correspondent means that we grow certain varieties of fruits and vegetables over-luxuriantly, or that we select the largest varieties and reject the smaller, or it may embody both these assertions. Perhaps he is correct. In many cases he may have hit the mark correctly.

Beyond all doubt size in the vegetable and animal kingdoms has an imposing, and it may be said a captivating, effect on many minds. More particularly is this the case in regard to such objects as become the special care of the cultivator and feeder, who naturally enough likes to see and cultivate things that are given to develope into all the sizes they are capable of. Fostered by public demand, exhibitions, and commercial success, beyond all question size in fruits and vegetables, instead of quality, and at the expense of it, has been too much the aim. In the markets of our great consuming centres size and appearance bring much better prices than the highest order of quality weight for weight. This of necessity compels the grower for market to go in for size if he is to hold his own in the scramble for existence—a fact that does not say much for refinement of taste on the part of consumers.

Anyone who in October prefers to give, say, 3s. 6d. per lb. for Gros Colman Grapes, and will not buy fine Black Hamburghs when to be had for 2s. 6d. or 2s. per lb., is surely to be pitied either for the poverty of his taste or for his ignorance. Gros Colman, especially at the time named. is not in the running with the Black Hamburgh for all that is fine in quality, yet this fine old Grape and all other first-rate blacks are being fast driven out of the markets by Gros Colman. The latter when grown in high Muscat temperature and allowed to hang on the Vines till January, or, better still, February, is a good and pleasant Grape, but not equal in flavour to thoroughly ripened Lady Downe's at the same date, yet in the markets Gros Colman brings nearly double the price realised for the more modest-looking Lady. This craving for mere size and show leads me almost to exclaim in irony, "Where ignorance is bliss 'tis folly to be wise." In this matter the evil is not by any means confined to market growers and buyers. There have been far too many of the coarse sorts planted and grown by gentlemen's gardeners for nothing else than for the size to which either the berries or bunches attain. Horticultural societies have fostered and aggravated this malady by offering handsome prizes for mere weight and for collections of eight to twelve sorts of Grapes. No doubt this has been done to please the public eye, but it is not a sound education. Hence there is to be met with far too much space little better than wasted in the production of tasteless monsters, while the smaller and finer sorts have been in many cases all but hustled out of numbers of vineries. It has been no uncommon sight to see such as Raisin de Calabre, Syrian, and Gros Guillaume, and similar sorts planted and trained 5 to 6 feet apart, and allowed to carry a very few bunches each, simply for the sake of producing an abnormally large bunch or two to figure in a collection or get a prize for weight and gull the public, and it is feared in some cases the Judges too. More than double the weight of Muscats, Hamburghs, and Lady Downe's, and other good sorts could have been produced in the space thus little better than wasted.

Not long since a writer—if I remember correctly in these pages—had the hardihood to put forward Gros Maroc as a formidable rival in quality to the grand old Black Hamburgh. My judgment is sadly deficient if this Grape has a single quality except colour and size that brings it within miles, so to speak, of Black Hamburgh, and it is almost a sin to name it as a rival anywhere in any way except on the market stall, and to get 6d. or 1s. more per lb. The same may be said of Cooper's Black, which, if not identical with Gros Maroc, is very like it. Both, it must be granted, are beautiful to look at, and that is about all that can be said for them. The large-bunch-producing whites stand in the same relation as to merit to Muscat of Alexandria and others of that type as the large blacks do to Black Hamburgh, and it is a pity that horticultural societies have not the courage to check the growth of such coarse sorts from gentlemen's gardens. Here is a work for the Royal to take up that is surely worthy of it. After all the test of skill does not lie in the direction of coarse monsters. Muscats and Black Hamburghs and a few others are the real tests of skilful culture. The whole thing is a mistake. Let our fine varieties be grown to their largest size in bunch and berry, and no great fault need be found with the result. But even in their case moderate sized bunches are far and away the more useful for family service, a greater number of medium bunches being preferable to a lesser number of larger ones.

Before quitting the subject of Grapes I would say that in keeping Grapes for my own taste or that of a partieular employer I would avoid cutting and bottling them. This system is much practised now. No doubt it is a convenient one, but that is all that can be said in its favour. The extent to which Grapes lose flavour under it is enough to condemn it root and branch. The effect produced is very much like what the Highlander considers is produced in his whisky by adding cold water to it. The advocacy in some quarters of ripening Grapes in a low temperature is another method of spoiling good Grapes—aye, and Vines too. If a Grape is wanted of high quality and to keep well let the temperature be high, within certain limits, of course, to the finish in conjunction with a circulation of air. Such treatment produces a Grape entirely different in texture and in flavour, and as a consequence in keeping qualities.

The Grape has been thus dwelt upon, because what in this question of mere size is applicable to it applies to most of the products of our gardens. The mistaken craze for size and appearance is carried too far. This refers to nearly all other fruits—Melons, Pines, Peaches, Figs, Apples, Pears, Gooseberries, Strawberries, &c., the smaller varieties of which are, as a rule, the best, and where there is an exception it only proves the rule. It applies not altogether to large sorts, but to abnormally large examples of smaller sorts. I was very much struck this winter in comparing the flavour of some very large Apples with that of medium-sized ones of the same sorts that were grown two or three hundred miles further north. The latter had the much better flavour, were more solid and crisp. The more spongy texture of the very large ones was very conspicuous. The difference was as striking as that between the Chesterton yellow Turnip and the Aberdeen short top yellow. The former is what we in the north call "bosse" or "fosey," while the latter, though less bulky, is far more solid and heavy, and of course better. Speaking of these Turnips, I saw at an agricultural show in September the first prize awarded to the Chesterton, while Aberdeens were placed second on no other ground than a point or two of size. On being cut open the absurdity was patent to all. As well place a west Highland ox second to a shorthorn for quality of beef.

There is much to justify the remarks not only regarding Brussels

Sprouts but other vegetables as well. The absurdity of the preference for mere bulk is far too prevalent. Large Brussels Sprouts are invariably loose and deficient in quality, and surely to the eye, of nice appearance. They are not solid enough to begin with, and when cooked there is no getting the water out of them without squashing them out of shape in the process. The smaller bullet-like sprouts boil as whole as a Potato, are easily dried without smashing them, and are of much milder flavour. The most perfect forms of this fine green that I have met with are the "Northaw" and "Ne Plus Ultra." Their stems are densely set with solid sprouts about twice the size of a marble. Large Beets, Celeries, &c., are invariably coarse. The smaller sorts of Cabbages are also the best. As a blanched or hearted Cabbage what can be finer than Chappel's Colewort?

Potatoes are also mentioned. For a special object, and by command, I have probably grown the largest Potatoes of some sorts that have ever been produced. I have had bushels of Walker's Regent over 2 lbs., and one tuber 4¾ lbs., but I have no hesitation in saying that the usefulness of the Potato, for human food especially, is in inverse ratio to its size. The chief secret of having the finest Potatoes in the finest possible condition on the table is to have them properly cooked. They should be cooked in their jackets. The larger ones should be rejected and the smaller ones preferred, because in cooking a large Potato properly to its centre, the outside and best part of it is spoilt. Besides this, all large Potatoes deteriorate towards their centre. A friend in writing to me a few days since, referring to the absurd craze for size, says:—"I was very much struck by what Mr. Charles Van Geert of Antwerp said to me two or three years since when admiring the pretty little even-sized Potatoes that came to table, none of which was larger, and some smaller, than a hen's egg. I asked him what variety it was, as I had noticed them wherever I had been in Belgium. He said they were just the same as we had in England, only the small ones were sorted out. Then he added, What you give to your pigs we eat, and what we give to our pigs you eat." Now if what has been remarked above about the relative cooking and other qualities of large and small Potatoes be correct, the Belgians are right and we are wrong. If the raisers and exhibitors and vendors of the deluge of huge worthless Potatoes that have been showered on us of late years had directed their energies to quality and moderate size, and if judges had set their face in the right direction, we might have been better off to-day. Not one of twenty of these monsters is fit for human food, and our very oldest are yet the very best.

Nothing stems the craze for mere size in fruits and vegetables more effectively than having to meet the demands of a first-class French cook, backed by the refined tastes of a nobleman and lady. The gardener who has to do with such soon finds out that monsters will not suit. I remember some very large coarse Celery being once sent from a distance to a cook I served for many years to show him how much larger it was than a fine type of Incomparable White which was exclusively grown to meet his wants. The former soon found its level at his hands.

The Scotch have a saying that "Gude gear is pit up in wee booke," and the rule holds the field. It is true of fruits and vegetables just as it is true of beef and mutton. The larger, as a rule, the more coarse and deficient in flavour are the products of the animal and vegetable kingdoms.—D. THOMSON, *Drumlanrig*.

"TURNER MEMORIAL" PRIZES FOR 1888.

AN idea prevails that the prize money available from this fund should be set apart to give prizes for florists' flowers only. This is an error. The expressed wishes of the Committee were, that as the late Mr. Turner had a mind in active sympathy with every branch of horticultural work, and had introduced new varieties of fruits and vegetables as well as flowers, prizes should be given for fruits and vegetables. Acting on this assumption the Trustees have decided to give a fresh prize of £10 at the Grand Yorkshire Gala, York, 13th to 15th June, for a collection of ten distinct varieties of fruits. The Society will give £5, £3, and £2, as second, third, and fourth prizes. At the Crystal Palace, on October 11th to 13th, the following prizes for twelve dishes of vegetables, distinct—first prize £4, second £3, third £2, fourth £1. These prizes are open to gentlemen's gardeners only.—JAS. DOUGLAS, *Hon. Sec. to "Turner Memorial" Fund.*



DEATH OF MR. JOHN DAY.

ON Sunday, January 15th, died a distinguished amateur orchidist, Mr. John Day of Tottenham, and numbers of horticulturists besides those specially interested in Orchids will learn the news with deep regret. For many years Mr. Day devoted himself earnestly to the cultivation and study of Orchids, during which time he formed a most extensive and valuable collection that was famed throughout Europe for the number of varieties it contained. All who had the pleasure under the guidance of the proprietor of inspecting the houses crowded with choice Orchids prior to the great sale will not readily forget the quiet enthusiasm with which he regarded his plants. It will be in the memory of many that the principal collection was sold in 1881 in four portions, realising a total of £7000, amongst which the celebrated Cypripedium Stonei platytænium was sold for 140 guineas, with many other valuable plants that were confined to the Tottenham collection. Since then Mr. Day has devoted his attention to a few plants, but has been a frequent visitor to all the leading trade and private collections of Orchids around London, and has sketched some hundreds, probably thousands, of the most notable Orchids he saw in his travels, filling about fifty large books, a collection in its way scarcely less remarkable than the plants he formerly cultivated. Mr. Day had also travelled in India and South America and the West Indies, both as an observer and a collector, by which he gained much information that he not only utilised himself in the culture of Orchids, but which he was also always ready to communicate to his friends. In a general way he was reserved, and of late years did not enjoy good health. Innumerable plants have been named in his honour, also after his sister, Mrs. Wolstenholm.

WARNE'S ORCHID PROTECTOR.

One of the troubles of an Orchid grower is to prevent slugs, ants, woodlice, and other insect pests reaching the plants, injuring young flower spikes, or disfiguring expanded flowers. When pots are placed directly on the shelves this is not readily accomplished, even when the stages themselves are isolated by means of saucers of water surrounding the supports, but it is far better to isolate the plants individually. Then if proper care has been exercised in examining the peat, moss, and crocks before using them, there will be little difficulty in keeping such enemies at a safe distance. A capital contrivance for the purpose is the saucer and stand shown in fig. 8, which is manufactured by Mr. Conway G. Warne, Weston-super-Mare, and which has been patented. As will be noticed, it is of similar design to that employed in Mr. W. Lee's Orchid houses at Leatherhead and illustrated in these pages a year or two since, but it differs in an important particular—namely, the centre is hollowed so that water can pass freely from the pot placed upon it, and when pots are stood upon a perfectly flat smooth surface there is always a danger of interrupting the drainage. The saucer is filled with water, serving as an effectual barrier to most insects, and further affords a constant supply of moisture, which evaporating steadily beneath the foliage is very beneficial.

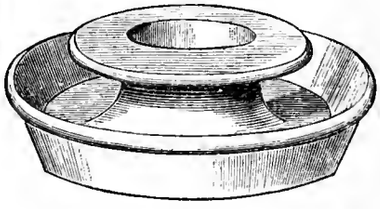


Fig. 8.

DENDROBIUM STRATIOTES.

Of the numerous Dendrobiums now in cultivation perhaps there is scarcely one to equal D. stratiotes in singularity of form and distinctness of colouring. Last September a plant was shown at South Kensington from the Burford Lodge Gardens, Dorking, that indicated the peculiar characteristics of the species in a remarkable manner, and it then formed one of the most prominent features of the meeting. The specimen had a short raceme of four flowers, as represented in the woodcut (fig. 9) which faithfully pourtrays their

strange formation. In most Orchid flowers, when the sepals and petals are not of equal size, the latter are the larger, but in D. stratiotes the sepals are four or five times broader than the petals, much shorter, and white. The petals, which constitute the most curious portion of the flower, are very narrow, ribbon-like, of a greenish tint, and regularly twisted in a spiral fashion. The lip is three-lobed, the centre one being much the most prominent, ovate in form, pure white, with a few deep purple irregular veins, the side lobes being marked with a few parallel streaks of a similar colour, and lead into a short conical tube or spur. It was introduced to Belgium a year or two since by one of Mr. Linden's collectors in the Sondaic Archipelago.

LÆLIA GOULDIANA.

At one of the sale rooms recently I saw some plants in flower of this new and beautiful Lælia, and though it is a near relative of L. autumnalis and L. anceps, it is readily recognised as quite distinct when compared with them. Upon the same occasion Mr. F. Sander pointed out to me the rare L. Crawshayana and L. furfuracea, which, with the three named above, form a group of five handsome allies, and it afforded a good opportunity of comparing them. L. Gouldiana was found in a collection of Orchids in the United States during a recent tour there by Mr. Godseff, the representative of the St. Albans firm, and it was very properly suggested that it should bear his name, though it was ultimately named Lælia Gouldiana in honour of Mr. Jay Gould at the desire of Messrs. Siebrecht and Wadley of New York. The flowers are remarkable for their deep crimson colour and beautiful shape, the petals being very broad and quite rhomboidal in form. The colour is uniform throughout the sepals, petals, and lip, but there are some slight variations in which the throat of the lip is lighter or nearly white. It is a grand winter flowering Orchid, and will become a favourite in many collections.—LEWIS CASTLE.

BRITTLE SNAKE IN THE ORCHID HOUSE.

THE brittle snake (Anguis fragilis, *Linn.*), or the slow-worm, is a native of Britain, common in England, not so common in Scotland. When full grown it is about 12 or 13 inches long and generally of a dark glossy colour, moves slowly, and has a beautiful snake-like head with keen piercing eyes, is perfectly harmless, and can be made a pet. I find this snake a grand assistant to the green tree frog in the Orchid house, as its principal food is snails. All Orchid growers hate snails, as they destroy flower spikes and young pseudo-bulbs. Some years ago a friend of mine purchased a rare Phalænopsis for 10 guineas. Next morning when he went to look at the rare plant he found to his disgust that a snail had made his breakfast off the plant—a most expensive breakfast, many will say. I would advise Orchid growers to give the slow-worm a trial. They can be purchased from any dealer in wild animals.—ALEXANDER PATERSON, M.D.

CYPRIPEDIUM SANDERIANUM.

WE learn that Mr. William Bull, King's Road, Chelsea, has lately purchased a plant of Cypripedium Sanderianum for £300, and it is said that the same plant was purchased by its recent owner a few years ago for 50 guineas. This is the largest price recorded as having been paid for one Orchid.

LÆLIA ANCEPS BARKERIANA.

BY this post I am sending a spray of this beautiful Lælia, which my employer, W. H. Watts, Esq., considers a decided advance upon the ordinary forms of L. anceps, an opinion upon which I am sure you will agree. Still, the various shades of this popular Orchid from the richly coloured L. a. Barkeriana to the palest forms are not to be despised, and are well worthy of cultivation. If we take into consideration the time (midwinter) and freedom of its flowering, simplicity of culture, and price at which it can be procured, this Orchid must commend itself to all in possession of a stove or intermediate structure.—A. R. COX.

[The variety named is well known as a handsome and rare one, the flowers before us showing the rich colouring admirably.]

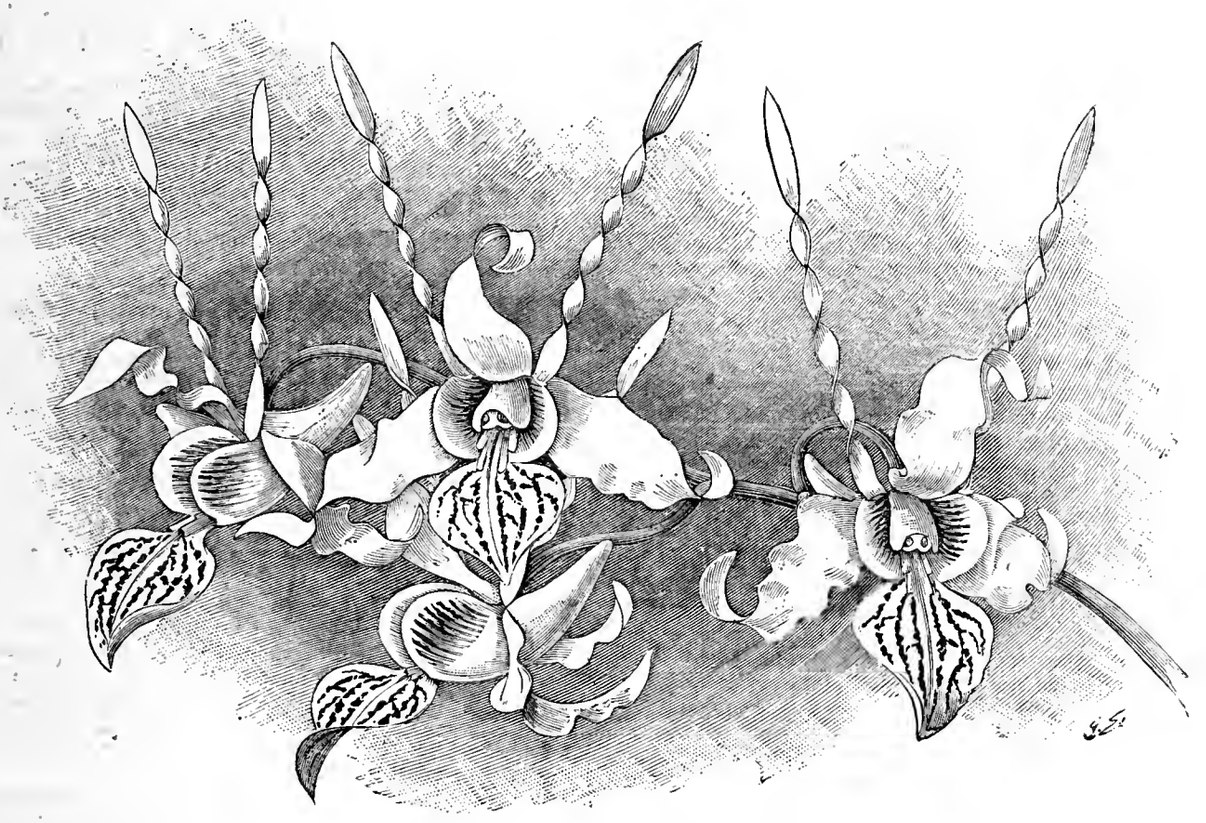


FIG. 9.—DENDROBIUM STRATIOTES.

CROPS THAT PAY.

WE seem to have been congratulating ourselves that the good old ship of horticulture was making steady but certain progress. Upon reflection, I think it may be said we have made a move onwards; but nevertheless we have been too apathetic, while the cultivators of other countries had their eyes turned to the future, and patiently plodded on, preparing themselves to supply our markets with fruits, flowers, and vegetables. Years of depression have not had the stirring effect amongst home cultivators that we might desire, for still foreigners supply our markets with the produce of the soil in much larger quantities than formerly. Something seems to be radically wrong, for the impression is firmly established that "nothing pays." Is the land worse than formerly, or is it incapable under good and intelligent cultivation of yielding the same as it did years ago, or is it that those who cultivate it have grown slothful and indifferent? Not long ago bad seasons were to blame, and now explicit reliance seems to be placed on the

reduction of rent as an amendment for all the evils that have been lately hoisted before us. The land is as good as ever, and speaking generally no better can be found in any other country. Its resources only want developing. In many cases I firmly believe that if cultivators had the land for nothing they would fail to make it pay. There is prosperity still in store for many tillers of the soil if they could only be induced to bestir themselves to greater diligence and energy; in a word, to turn over a new leaf in the management of land and cropping. I am not alluding to farmers in particular, but to all tillers of the soil, whether they term themselves agriculturists or horticulturists. I see an Agricultural Education Bill is projected to provide for teaching the principles of agriculture and for the provision of school gardens for the illustration of those principles, the subjects to be taught including grafting, pruning, fruit, flower, and vegetable growing. So far so good, but while these principles are being instilled and take permanent effect, there is ample time for many by their own efforts to rise to a prosperous condition, or, on the other hand, to be ruined by neglect.

If we try to see how matters stand at present, to what conclusion can we arrive if we glance at the returns of our agricultural imports that have been issued for the past year? We have to pause before we can say that we are making progress, at least in the production of vegetables. We imported more by £133,143 worth last year than was the case in 1886. Are we to draw the inference that we have been producing less than formerly? or shall we take the more hopeful and perhaps reasonable view of the case, and say that the public demand for vegetables has increased so enormously? I should say this is the right view to take, and I believe the increase will go on steadily—especially if trade continues to prosper—then why not prepare in earnest to meet from our own land this increasing consumption? The question that it is natural to ask is, How do we know that the increased consumption of vegetables will continue? No fear need be entertained on this score, or even in disposing of the produce if good and of the right kind. If we suppose that it does not increase there is ample scope for cultivators to meet the demand that already exists, for we paid away last year for these articles the enormous sum of £600,882. I think it is high time we stirred up to greater effort those engaged in husbandry, and I do not know a more suitable place than our Journal in which it can be done.

While the impression so largely exists that "nothing pays" it is my intention, with the Editor's permission, to remove if possible these erroneous notions how it can be accomplished by growing "crops that pay." Mushroom growing has been urged as a profitable concern to the successful grower, and its claims cannot be too forcibly pressed to the front, as it is one of the most remunerative crops that can be grown. They can be grown to realise a good return to the grower at a much less price than can now be obtained for them in the market. This is a good time to make beds, and those who know nothing of the business should study Wright's "Mushrooms for the Million," and if the details there given are intelligently carried out and added to or modified according to circumstances none need fail. My crops, by information gathered from that source, paid the rent and labour, besides clearing the cost of the manure, which will materially reduce the cost of other ground crops by applying it instead of having to buy fresh. But it has been said, If more start growing them you will not make so much out of them. I shall just make the same, for this is easily done by increasing the number of beds. At present there are more consumers than there is supply, consequently they are imported from France. If they are cheaper more will be consumed; the supply may be in our own hands, and the grower as well as the consumer will profit by increased production.—MARKETER.

SIX GOOD PEAS.

THERE is no vegetable that commands more attention for summer cultivation than Peas. So anxious are many to possess them that the days are counted from the time the seed is sown until the first dish is gathered, and this is not confined to large gardens, but amateurs, and even cottagers, have all a desire to secure early Peas. From May until October Peas afford a never-failing topic. If we go into a garden in May one of the first questions asked is, "Have you gathered Peas yet?" Farther on, when the hot dry weather of July and August is apt to interfere with the success of many crops, the question is, "How are your Peas?" and later still when the days are shortening and the cold nights are staying the progress of vegetation the question is still, "Have you any Peas?" and from beginning to end the important question as to which are the best varieties for a long and good succession is freely discussed. This is a point that is forced on all; and although it is not unseasonable to speak of it when the Peas are being inspected in the rows or tasted on the table, it is now at the commencement of the sowing season that the matter may be discussed with great advantage. All kinds of vegetables have multiplied at an extraordinary rate during the last twenty years, and none more so than Peas. In a list before me, a good and trustworthy one from Messrs. Barr & Son, the number of varieties of Peas offered is just sixty, and I almost tremble to think of what will be said of the fifty-four that my heading excludes, but for all that I am not afraid of stating what I regard as six good Peas; and although these are some of the newest my selection has been made from over fifty, and the weeding out has been done without fear or favour.

Carter's Lightning is said to be the earliest Pea. I can verify the assertion, and therefore begin the season with it. It is a compact robust grower, attains a height of 2½ feet, or 3 feet if grown in very rich soil. The pods are produced in multitudes about 3 inches in length each, and they are crowded with Peas of fine flavour. They fill quickly, and prove very remunerative and acceptable as a first crop. Probably some may think if it is only ready from six to ten days before Harbinger, Ringleader, and other better known Peas, it is not much to speak of. I am of a different opinion, as even a week advance in the time of having Peas in the market or on the table makes a wonderful difference in the price and the appreciation of this choice vegetable, and apart from its unique early character, its other points are decidedly good. We put it down as a May Pea, and come to

Veitch's Prodigy as a June variety. This Pea has two good parents, one being Giant Marrow and the other Stratagem, and it is therefore not surprising that it has come to the front as a Pea of the finest quality. It is a second early. It is a robust grower, and runs up to about 5 feet in height. It pods with remarkable freedom, and each pod contains from eight to ten Peas. Being wrinkled Marrows they are grandly flavoured, and in all points Prodigy is a fine second early Pea.

Webb's Wordsley Wonder is our favourite for July, or indeed for a general main crop. No fault can be found with it. Probably no Pea was ever subjected to a more rigid trial all over the country, and the result was all in its favour. I have grown it here from the first. It is a blue wrinkled Marrow, grows to a height of 2½ or 3 feet at the most, and is more prolific than any Pea I ever saw. It has a capital constitution, is thoroughly adapted to contend successfully with the warmest and driest weather, and as a table or show Pea it will hold its own against all comers. Some varieties have a bad fault of forming good Peas in the middle of the pod, but fail to fill at the points; this deficiency is unknown in this variety, as the pods fill from end to end in a most satisfactory manner. Had these notes been confined to one Pea, Wordsley Wonder would have been the one selected.

Telegraph is a well-known variety. It has been out for years, and has done excellent service in thousands of gardens. It grows to a height of 6 feet or more, and its stature is rather against its culture in the hands of those who are badly off for stakes, but it produces many handsome dark green pods, and the flavour of the Peas is excellent. It is a main crop variety, and well merits being included in all lists of six good Peas.

Veitch's Perfection has stood the test of many years, and all who have grown it cannot help asserting that it is a good Pea. It is not so prolific as some, but it grows compactly, and the flavour is delicious. It may be sown to bear freely in September, and while it will not display any deficiencies in the garden, it is certain to give the highest satisfaction on the table.

Sutton's Latest of All Green Marrow.—Very late Peas should be grown in every garden. When they can be secured in October or later they are as much valued as very early in the season. I could name many with pretensions to be late, or the latest, but in my opinion the one named above is not only a good Pea, but the best of the late varieties. It is 3 feet in height, and very productive as a late Pea. It is dark green in the colour of the leaf, the pods are the same, and they swell and fill more freely at the end of the season than any other. Its extremely hardy character is a strong point in its favour, and as to the flavour it is first-rate, indeed as a late Pea I consider this variety to be unique. Considering that Peas are so generally grown, and all can readily note their qualities, some of your readers may be inclined to give their opinion of these or other varieties, and I have no doubt their remarks will prove highly interesting.—J. MUIR, *Margam, Port Talbot.*

KENNEDYA MARRYATTÆ.—Though an old plant, this is not by any means frequently seen in gardens. At the present time we have a plant trained to the rafters of a conservatory, the shoots being allowed to droop over the side stages and path to the lengths of 3 or 4 feet. These are now crowded with bright red flowers, and have a beautiful appearance, the foliage also being distinct and pleasing. When it can be induced to grow freely this plant needs but little attention beyond a good pruning every season and keeping it clear of insects, such as mealy bug.—M. A.

ROSES.

PREPARING MARECHAL NIEL FOR FORCING.

Whatever may be the defects in the constitution of this popular variety it is one of the most valuable that can be grown for supplying flowers early in the season. For this purpose the plants must be well and strongly grown, and thoroughly ripened early in autumn. Immature wood will not produce good blooms early in the year, the eyes from which they should issue very frequently result in nothing but growth. This is often due to raising the plants too late in the season, and then subjecting them to close treatment, which fosters luxuriant growth at the expense of solidity.

Plants of this variety that have been grown under greenhouse treatment during the past season have plenty of wood upon them that will be suitable for cuttings. Twiggy side shoots strike with greater freedom than shoots of stronger growth, but the latter are preferable, for they grow strongly when rooted, while the others cannot probably be induced to make a strong shoot before the season is over. Shoots that are half ripened are the best, and these may be had in quantity near the extremity of shoots that have scarcely yet ceased to grow. The cuttings only need two joints, one to be placed in the soil and the other to be left just above it. They may be inserted at once in 7 or 8-inch pots, well drained, moderately thick together, in sand, which is better than a mixture of soil and sand, because the roots can be disentangled without breaking them, which is not the case when soil is used, even if it has been sifted. After insertion they should be well watered and covered with a bellglass, then placed in a temperature of 65°. If the pots can be plunged in a warm bed so much the better. In three weeks or a month the young plants will be ready for potting singly into 3½-inch or 4-inch pots. This must be done carefully and every root preserved, or growth will be seriously checked. At this potting equal parts of loam and leaf mould with a little sand added should be employed for them.

The pots should be replunged, in fact plunging must be carried out the whole of the season if practicable, or until they are started in their flowering size. The slight warmth they will receive from below will be advantageous to them. When once started in their flowering pots such assistance is not needed. Where accommodation of this nature does not exist they can be grown very well without, but their progress in the early stages will be slower.

When the young Roses are about 1 foot high it will be necessary to shift them into 6-inch pots and supply each plant with an upright stake. One-third instead of one-half leaf mould only should be used this time, and one-seventh of manure may be added. By the time they have filled these pots with roots they will be about 3 feet in length. From these they should be transferred into 10-inch, using the same soil as before, only add one 6-inch potful of soot and the same quantity of bone meal to each barrowful of the soil needed.

When established in these pots they must be carefully and gradually hardened to cool treatment, for any check will be injurious. Frequently at this stage strong shoots will issue from the base, which should be encouraged, for shoots of this nature will soon outrival the others, and often travel a length of 20 to 25 feet before the end of the season. These are the shoots that result in excellent plants for forcing, and will mature sufficiently to flower satisfactorily if trained close under the roof of a light and airy house. During the time these shoots are in rapid growth weak stimulants may be given, or better, and safer still, a little artificial manure applied to the surface at intervals of about three weeks.

To insure their starting well and freely when introduced into the forcing house they should be taken outside about the end of October or early the following month, and tied to a wall or fence to prevent their being broken. If practicable plunge the pots, for while it is beneficial to subject the shoots to a few good early frosts there is no advantage gained in allowing the soil in the pots to become frozen. This is the easiest and most certain method of inducing the plants to rest completely for a time.

Those who have not practised this method of forcing rest upon the plants will be surprised how much easier forcing operations are rendered afterwards. We will leave the plants outside, and the details necessary for their preparation and forcing until another issue.—N.

ROSES IN WINTER.

A "Suburban Amateur" will find no difficulty in obtaining Tea Roses in winter provided he has space to grow them. We have a great demand for them all the year round, more so in winter than other seasons, and never fail to produce them by following this rule. The last week in July or the beginning of August we repot in a compost of light loam, wood ashes, and a liberal sprinkling of sand. The roots of established plants are reduced and returned into the same sized (clean) pots. Young plants are given a slight shift without disturbing the roots. They are placed in a partially shaded position, and kept sprinkled, the hotter the weather the oftener syringed, till root action commence, then exposed to full sun to secure well-ripened wood. All flower buds are kept pinched off, and in September we prune them. A few are stood on one side, and a slight rest is given by withholding water for a week or two. The first week in October they are taken into a gentle heat, and soon commence expanding their buds; in a month's time other plants are taken in. These have supplied us with flowers since the beginning of November, and at the present time are full of buds, which promise to give a few daily for the next six weeks. Others are served the same for a continual supply.

Judicious watering is absolutely necessary. If allowed to get dry or too wet, the foliage assumes a sickly colour, and disappointment follows. Occasional sprinklings with Clay's fertiliser assist the plants greatly. Ventilate on all favourable occasions, but avoid cold draughts, or that terrible pest mildew is sure to make its appearance, which must be immediately checked. Prevention being better than cure, we boil 2 lbs. of softsoap in 4 gallons of soft water fifteen minutes, and mix 1 pint of the solution with 4 more gallons, and syringe on twice a week, or oftener if necessary, sulphur making an unsightly appearance; gentle smoking will destroy all aphides.—G. K.

ROSE-GROWING FOR BEGINNERS.

In compliance with the request of several correspondents Mr. D. Gilmour has published the series of articles that appeared under the above heading in this Journal last year in the form of a manual. It consists of eighty-four pages in a stout gay cover, and will meet the wants of many who desire plain information on the cultivation of Roses. The work has been issued for some weeks, but a copy has only recently come to our hand. It is published by Mr. William Cate, Bouverie Street, London.

THE SEEDLING BRIAR.

I am glad to see the subject of the seedling Briar as a stock for Roses is being well discussed in your columns. I certainly cannot think that it is good for the seedlings to have their tap roots cut, as they appear to me to be one of the great points in favour of this stock. During last summer I had an opportunity of observing two large quarters of Roses, one worked on Briar cuttings, the other on seedling Briars, and although not far from each other, those on the latter were the most continuous bloomers, and appeared to suffer less from the intense drought than those on the others. I think this is a fair argument for the retention of the tap roots of the seedlings, as in a season like the last they are better able to procure moisture by striking down deeply than roots running near the surface. I think there is no method of growing Roses by which such a continuance of flowers can be obtained as the one in which Roses are budded on the seedling Briar, and for that reason I strongly recommend them. I do not see any advantage in growing Briar cuttings. They are certainly not cheaper to procure, and if one is ever so careful the suckers will come, and much more frequently than on the seedling Briar. What splendid Tea Roses can be obtained on this stock. The colours and quality of flower altogether are much finer than when grown in any other method, with perhaps the exception of standards.

Another great point in favour of the seedling Briar is that Roses grown on them are better and more plentiful in autumn than those on Briar cuttings, Manetti, or standards. This I have proved for some years. I have cut Roses from seedling Briars in October, when there was scarcely one to be found on any other stock.

There is another matter which I think might be discussed advantageously in "our Journal," and that is, What is the best height to have our standard Roses? Are not 2 to 3 feet stems tall enough? For my part I prefer to see Roses on 2-feet stems than the most ungainly objects on 4-feet stems one so often meets with. And, again, one is more likely to get the varieties he prefers from the nurseryman on a short stem than he would if ordered on 3½ to 4-feet stems.—Rosieriste.

[We have several other articles on Roses, for which space cannot be found in the present issue.]

USEFUL POTATOES.

At one time last season the prospect of a Potato famine was a contingency seriously contemplated, and very few of us were prepared for the agreeable surprise in store for us. Instead of few or no Potatoes being obtained quite a good average weight was lifted hereabouts, but whether the quality generally is equally satisfactory is very doubtful. With us it is not, neither in the case of those lifted before supertubering was far advanced, or those dug much later on. Ours on the whole stood the drought remarkably well, and had I been a little sharper in lifting or drawing the haulm a fairly heavy crop of good tubers would have been secured. Unfortunately it did not need a soaking rain to start the second growth, and the character of the whole crop in many instances was changed as if by magic. Before the change to showery weather not a few cultivators were complaining that many of their Potatoes had formed much more haulm and roots than usual and scarcely any tubers. If these had lifted when we did in order to avoid having a mixed crop of tubers they would not have secured a tenth part of the crops that eventually resulted. Large breadths were growing strongly both above and below ground, when the early frosts cut them down, and then a lot of tubers that I saw lifted resembled the much rubbed early crops annually sent to the markets.

With so many new and old varieties in cultivation, numbers of which are more or less worthy of a trial, it may at first sight appear a difficult matter to decide which are the best, but if we pass over the showy section and come to the really useful Potatoes the weeding out process is by no means hard to accomplish. White Elephant has stood out pre-eminently good. It was never good with us. Hereabouts it is in the cottagers' gardens, where it is mostly grown, and this season it yielded very heavy crops of extra large tubers. Fine solid tubers, 1 lb. in weight, were plentiful enough, and a few were forthcoming weighing 2 lbs. and upwards. All were of fairly good quality, and altogether it may be classed as a fairly reliable sort for hot or shallow soils and dry seasons.

Idabo, a rather ugly rough-coated white round, also crops heavily, keeps well, and is of excellent quality. Its disease-resisting qualities have yet to be tested, but it is worthy of a trial by those who do not care for appearance so much as uniform good quality. It is of fairly vigorous habit, and reminds me of the "Irish Lumpers" of my boyhood days.

Village Blacksmith scarcely comes up to the high character given it. With us it grows very vigorously, but does not crop so heavily as anticipated. The tubers are round, fairly shallow eyed, remarkably rough coated, and cook very satisfactorily. I should say it will prove disease-resisting and evidently will thrive under the same conditions as best suit the Scotch Champion. A trial may well be given it.

The Dean, a blue round, is not a good cropper here, but the tubers grow to a large size. Both this and the foregoing keep well, but I am of opinion it will never become generally popular. Vicar of Laleham though largely grown is not reliable as a disease resister, and on heavy soils especially is apt to be poor in quality. Cosmopolitan apparently likes a hot and dry season, for we never had it so good either as regards the weight of crop or size, shape, and quality of tubers, but it is much liable to disease, and even this season we found several affected. For this reason I cannot recommend it unless a good exhibition kidney is needed.

Cole's Favourite, a white kidney grown here for the first time, yielded exceptionally heavy crops of medium sized very handsome tubers, and these were of excellent quality. It is a second early, and forms sturdy branching haulm. This season I intend to plant it extensively, and strongly recommend others to do the same. A grand dish of it was exhibited at Taunton last autumn, and in competition is hard to surpass. Sutton's Seedling again proved very serviceable, and ought eventually to become a favourite with market growers. It does not form a great amount of haulm, and matures a heavy crop of large handsome tubers sufficiently early to admit of an early clearance—a decided gain to those who double crop their ground. Abundance belongs to the disease-resisting class, and requires plenty of room and manure, for which it amply repays. Chiswick Favourite, white round, with rather deep eyes, forms sturdy haulm and crops heavily, the quality being also good. We have grown it for three seasons with highly satisfactory results, and can therefore strongly recommend it for the main crop and late supplies. Chancellor, a large and handsome white kidney, also does well and is a good companion for the last named. It forms plenty of haulm and promises to be disease-resisting.

Of better known varieties, Reading Russet, second early, red round, is one of the most popular. It forms good sturdy haulm, always crops heavily, the tubers being handsome and fairly good in quality. Lady Truscott is a good white companion for it. Schoolmaster seems to have collapsed, and very few now cultivate it. Covent Garden Perfection is largely cultivated by a friend of mine, who considers it excellent for the second early supplies, but with us it was much liable to disease, and very rarely fit to eat. Pride of America, Snowflake, Triumph, Adirondack, and those of Yankee origin generally are useless in a wet season, being only profitable and good in quality on light soils and during a season somewhat similar to that last experienced.

The Ashleaf section may also be briefly dismissed. The true Old Ashleaf is the best for pots, frames, and early borders, no other variety yielding such a good crop in proportion to the smallness of haulm formed. It is fit for lifting before the tubers are fully grown. Veitch's Improved Ashleaf everybody is acquainted with, this being the most generally grown for the earliest supplies. This, besides being good when lifted early, also keeps well, and is one of the best for planting extensively in gardens where double cropping has to be closely practised. Myatt's Ashleaf, if obtained true to name, is also to be strongly recommended, as it is fairly early, heavy cropping, and good in quality, also keeping good till midwinter.

Having commented on the comparatively new varieties, as well as older favourites, we must not omit the invaluable disease-resisters. Sooner or later the time will come when these will again be in the ascendant, and immunity from the disease must not make us forget what sad havoc it may again work among the Potatoes. Fortunately the varieties that do well in a bad season are equally trustworthy under more favourable conditions—that is to say, they well repay for good culture at all times. Scotch Champion is yet the favourite here, and if ever superseded, it will be by the seedling raised from it by Mr. Laxton of Bedford, this apparently possessing all the good qualities of the Champion, and being, in addition, more shallow-eyed, and therefore much less wasteful. It is handsome enough for exhibition, and cooks beautifully. Scotch Champion has been, and still is, very good, this being what we send to the table up to midwinter. To follow this we have Magnum Bonum, but I am sorry to find this is not so uniformly good as usual. Supertubering did not spoil the quality of the Champion, but it has injured the Magnums. The latter stood the dry season well with us, and produced quite large tubers. A good round companion for it, if the Champion is objected to, will be found either in Abundance or the Reading Hero.—W. Iggulden.

EUCHARIS CULTURE.

Few sights are more familiar when visiting gardens than to see in some out-of-the-way corner of the stove or forcing pits a number of overpotted sickly looking Eucharis amazonica. In most cases a great amount of labour has been bestowed upon them, but all to no purpose. "The mite has attacked the bulbs, and they will never be any good" is the remark that is sometimes passed about their condition. Now, if there is really such an insect I have never yet made its acquaintance, so that I may be pardoned for doubting its existence. But it was not to argue this point, an accomplishment which is decidedly not my forte, that I write this, but to state an easy method which I have seen successful in restoring plants to vigorous health after years of languishing. At any time when a gentle bottom heat can be obtained shake the plants out of their pots—they ought to be dust dry at the time, otherwise they cannot be shaken out clean—placing the bulbs in separate sizes for potting. Then have some pots of convenient sizes, thoroughly well drained, and over the rough material which protects the crocks sprinkle a good dash of soot. Pot them firmly in a compost of about equal parts of peat and loam of a sandy nature—if not a little can be added—and enough soot to show itself all through the compost. Water slightly and plunge the pots, or place them on the top of the hotbed. For a time they ought to be shaded rather heavily, which may be loosened as the plants seem to require it, but they ought never to be full in the sun. Keep the heat up to about the ordinary stove temperature. It is surprising how little water the Eucharis requires at any time, and it is far better practice to err in giving too little than too much.

I do not say that this is an infallible remedy, but I have seen it give such satisfactory results that it may be found worth trying. I think that a little soot agrees with the Eucharis, at least I attribute a great part of my success in their culture to the judicious use of soot water. When once established they may be grown in the same pots for many years with its assistance, and except to increase the stock they are better kept away from the potting bench.—M. D.

STACHYS TUBERIFERA.

This plant has attracted some attention as a new vegetable, and inquiries are becoming frequent respecting its qualities and the method of cultivation adapted to its requirements. Reference has been repeatedly made to it under the name of Stachys affinis or Choro-Gi, and with the former name it was exhibited at South Kensington last December by Mr. A. G. Hookings, gardener to Sir H. Thompson, Moulsey. There seems to be a little uncertainty respecting its true name, but several leading botanists regard it as quite distinct from the true S. affinis, and have adopted the title S. tuberifera as more appropriate. It is of similar habit to many species of the well-known genus Stachys, but is chiefly notable for the large number of small, spirally shaped, fleshy tubers produced on the roots round the base of the stem. Plants of moderate size bear some scores of these, and consequently it is very readily increased. The tubers are light, and contain a very large per-centage of water, being suggestive in texture and taste of the Jerusalem Artichoke, though some have also compared it to Salsafy. They contain, according to analysis, nearly 20 per cent. of starch, and upon this their value as a vegetable mainly depends, though owing to their small size they are not likely, unless greatly improved, to become of much commercial value.

The plant grows freely in ordinary garden soil that is not very heavy, but prefers a light, rich, and moist soil. The tubers should be planted in narrow shallow trenches, and covered 3 or 4 inches deep with soil, and may be assisted in dry summers with occasional supplies of water. One disadvantage is that the tubers will not

keep long after being lifted from the ground, but soon shrivel, and the only way is to lift them as required for use. In France, where it has been grown for market, it has proved quite hardy, and it has also been found hardy here in warm situations. Several methods of cooking have been tried, such as baking, frying, serving in soups, and as sauce, but these could, no doubt be considerably extended. —C.

FREESIA REFRACTA ALBA.

This beautiful plant seems to be gaining popularity, and there is no occasion for wonder that such should be the case. It is easily grown, free-flowering, lasts well in a cut state, and can be had in bloom from November up to March and April, a period when white flowers are most acceptable, especially when possessing an agreeable perfume. My method is to pot the bulbs about June into 5 or 6-inch pots, six to ten in a pot, and about an inch below the surface of the soil. The compost used is loam, leaf mould, a little dried cowdung, and a sprinkling of sand. After potting, they are watered and placed on the border of a vinery, or in any position affording an intermediate temperature, together with moisture and shade, until they have commenced growth. They are then brought out and placed in a cold frame, or even outside, where they remain until the end of September, by which time they have made sturdy growth. A few pots are then introduced into a little heat for early flowering, and the rest are kept in a cool greenhouse temperature, from whence a few can be removed into heat as occasion demands. For a late supply to come into bloom about March it is not advisable to pot until September, and with perfectly cool treatment, and keeping them close to the glass, they will come into bloom without any forcing about the time mentioned.

A great point is to have the bulbs well ripened. To insure this, the plants after flowering are placed in a sunny position near the glass, duly attended to with water until the leaves have died, and then allowed to remain perfectly dry until the bulbs are shaken out for repotting. A single pot will frequently treble its produce of flowering bulbs in one year, so that a stock is quickly raised when required.—J. C. A.

WINTER AND SPRING CABBAGES.

After Brussels Sprouts perhaps no green vegetable is in so much request at this season as good young Cabbages, and to obtain these in quantity is one of the difficulties many young gardeners have to contend with. Formerly London or Rosette Colewort was the sort mostly relied upon for this purpose, but in the neighbourhood of towns and the majority of localities in the north this sort has the great drawback of having the edges of its leaves injured by early frosts, and thereby rendered comparatively useless. Thanks to those who are ever on the look-out for improvement, we have now several varieties of good hearting Cabbages that meet all the requirements of the important demand. For the past three or four years we have found Ellam's Dwarf Early Spring a most serviceable sort. It is of a close compact habit of growth, with very few outside leaves surrounding a conical-shaped heart, which in the winter never become solid enough to be white, and is hardy enough to stand ordinary winters without having the edges of its leaves browned. When cooked it is tender as Spinach, and flavour excellent, the ideal of what an early Cabbage ought to be.

Laing's Early Matchless is another very fine winter Cabbage of the old Early York type, and when better known will doubtless find a place in many gardens.

Veitch's Earliest of All is also an excellent early, coming quickly into use, and deserving further trial. We make our first sowing about the 20th June, and the young plants are ready for transplanting about the second week in August in an open situation after a crop of Peas or Potatoes have been cleared away. Here they are planted in rows a foot apart and 9 inches from plant to plant. Two more sowings are made about the end of June and 10th July, but on no account must the young plants be allowed to get spindly. From the three sowings we grow about 5000, and are never a day without young Cabbages from the end of November until far into spring. Many people make a mistake in planting winter Cabbages too far apart, because when not close enough to steady each other the wind plays sad havoc amongst them.—James McIndoe.

CHRISTMAS ROSES.

Allow me to say a few words in support of Mr. Hilton's remarks on Christmas Roses in the Journal of January 12th. About the first week in November we took up three dozen clumps of H. niger and H. niger major, potted them in 24's, 16's, and 12's, and stood them in cold frames; then about a fortnight afterwards we put half of them in a warm pit, and had them in bloom about December 10th, and have had them flowering until January 14th. They have proved very satisfactory, as they can be used for vases, table decoration, bouquets, or buttonholes. They look very pretty associated with Holly berries. I filled some soup dishes with wet sand, covered the sand with moss, then made holes with a little stick, and inserted the blooms alternately with bunches of Holly berries, putting a fringe of Maidenhair round them. They look very pretty arranged like that, and the wet sand keeps them fresh for a week. We had some very fine flowers on H. niger major, but it does not bear half so many as H. niger. I counted three dozen blooms on a plant in a 16-size pot of the latter variety. We shall plant them out again as soon as they have hardened a little in cold frames. Kindly insert this my first article.—J. Ettle.

THE MYTICUTTAH.

This is a new pruning implement that has been recently perfected by the Standard Manufacturing Company, Derby. Some years ago the same company introduced the standard tree pruner, which has proved of great service in lopping and pruning tall trees, the implement combining lightness with strength. The myticuttah is on the same principle, but of the length of hedge-shears, and though much lighter will sever branches ten times stronger than any ordinary shears can remove. It is a small implement of great power, easy in action, and will be found serviceable in thinning fruit and other trees and bushes, of which so many are in need of assistance in the manner indicated. We have tried the new implement and find it answers its purpose well. It is represented partially open and closed in the engravings.

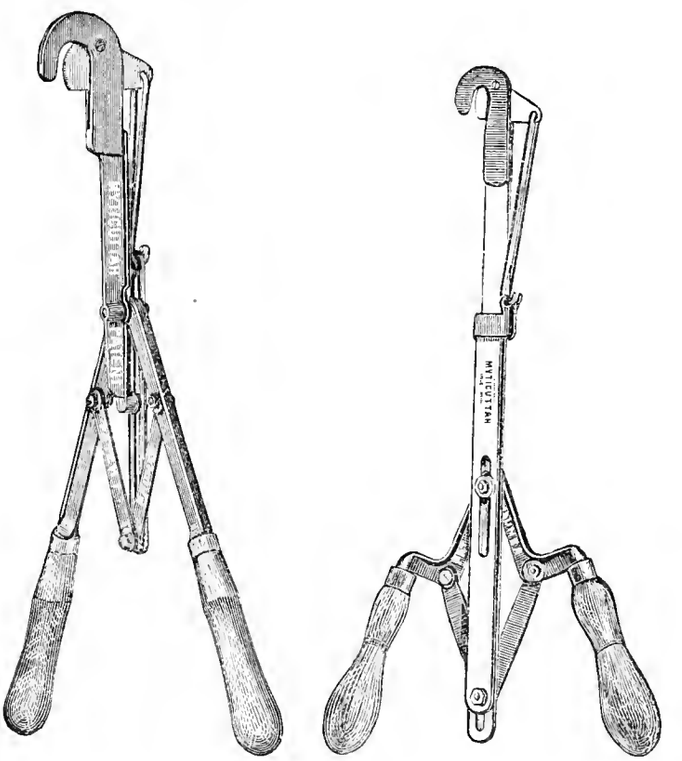


Fig. 10.

PLANTS AND FLOWERS IN THE HOUSE.

There is no diminution in the quantity of these employed for house decoration, but, on the contrary, their use for lending a finish to the furnishing of apartments seems to be on the increase. It is perhaps hardly the gardener's work to arrange plants and flowers so as to aid the general good effect of a room. In many cases, however, he has to do so, and the study of the subject becomes necessary. The one fact he must always bear in mind is to subordinate the plant arrangements to the permanent occupants.

In large apartments a few very large plants will be more in keeping than a number of small ones, and no plant should be placed where by any chance it will be in the way. Exactly the same remark applies to the employment of cut flowers. For large rooms use substantial vases and fill them with flowers and foliage of massive and striking appearance. At the same time it is quite admissible to adorn some particular table with a small plant, but it

must be of merit in itself, and also with small vases of eut flowers, but the flowers employed should, like the plants, arrest attention by some merit of their own. To particularise somewhat. We use for the larger publie rooms specimen Palms, sueh as Latania borboniea, a grand deeorative sort; Chamærops excelsa, also fine; Chamædoreas, &e. Crotons are good, also large Dracænas, tall Bamboos, and any handsome foliaged plant. Flowering plants inelude free-grown speeimen Chrysanthemums of the type of Simon Délaux, Elaine, Peter the Great, &c. Tall Fuchsias are very good; so are specimens of Celosia pyramidalis, a grand deeorative room plant which stands very well. Statice profusa is not easily injured. Large plants of double Ivy-leaf Pelargoniums are useful, but require light to stand well. Azaleas and Rhododendrons are very suitable. Riehardias, on aceount of their foliage being so striking, are extra good. Another season I hope to have Cannas. Liliums are indispensable, but the scent of L. auratum in some eases is offensive in rooms. However, nothing can be more beautiful than the eommon L. eandidum in a large mass. Of small plants the choiee ought to be limited to good Dracæuas or Crotons, well eoloured variegated Ficus elastiea, the variegated Pine Apple and Yucca filamentosa, well-grown Ferns, of which nothing surpasses the eommon Maidenhair. Platyeerium aleieorne also does well, and of green foliage plants nothing is better than Aspidistra lurida. Cyprus alternifolius from seed, aud Asparagus plumosus nanus are also useful. Amongst flowering plants Hyaeinths, Tulips, almost all kinds of Nareissus, Lily of the Valley, Solomon's Seal, Chinese Primulas, Cyelamens, Statice profusa, Carnation Souvenir de la Malmaison, Mignonette. Some of the hardier Orchids are suitable plants which I reeall to mind as good for finishing a table.

For furnishing tall glasses at present we may employ spikes and foliage of Pampas Grass, both excellently effeetive; Richardia spathes and foliage eut with long stalks Late Chrysanthemums are also good cut in bunehes with stalks from 18 inehes to 3 or 4 feet in length. During the time of Chrysanthemums nothing ean be better than these. It does not matter how large the flowers may be if they are set in freely with long stalks and as mueh foliage left as possible. Varieties of the type of Gloriosum with narrow florets stand much longer than the broad and close petalled varieties. Gladiolus cut foliage and spike are grand. Many of the large Irises are fine, using some of their foliage with them. Caetus Dahlias and some of the self Dahlias are also good. Occasionally used are side shoots of Hollyhocks, and tall Miehaelmas Daisies eut iu long pieees are very effeetive. Liliums are of eourse a host in themselves, two or three good spikes cut with long stalks well furnishing a large vase.

In arranging flowers they may either be set in just a few good pieces with foliage, or if a very massive arrangement is wished for more tall flowers may be used, and a few on shorter stems with plenty of foliage, set in lower and outside these. These remarks apply to vases standing 4 to 6 feet in height. The same class of flowers may be employed for glasses 18 inches to 3 feet in height, but as a rule sueh tall stems as advised above may be dispensed with. In the shorter glasses we ean choose from a much wider elass of flowers, as, for instanee, just at present nothing prettier need be wanted than a few stems of the rose-coloured Begonia semperflorens, not merely the flower stems, but the entire stems glossy foliage and all. B. Carrierei and the white B. semperflorens are also suitable. Mixed glasses may be prettily arranged with a few spikes of Zygopetalum Mackayi, Phalænopsis, Cœlogyne, or Calanthes, an odd bloom of Lilium Harrisi, and a few leaves of Aspidistra, Croton, or Calla giving each bloom spike or leaf a elear spaee in itself. In summer Iris graminea is a most useful plant, its foliage mixing well with Gladiolus and many other flowers, while it stands exceedingly well. Single Dahlias eonstitute pretty arrangements alone. The foliage and flowers of Solomon's Seal are extra fine. Few flowers are more useful, beeause so effective, as are Pyrethum uliginosum, white Sweet Sultan, and Chrysanthemum maximum. Salpiglossis form by themselves a quaint and pretty arrangement.—B.

(To be continued.)

PRIVATE versus TRADE GROWERS.

In his admirable retrospeet of "Hortieulture in 1887," "D., *Deal*," alludes to one very important matter in these terms:—"The question as to the equity of proprietors disposing of their surplus produee has been mueh debated, but personally I do not see why a gentleman should be thought mean if he disposes of surplus Peaehes, any more than of his surplus shorthorns or Berkshire pigs. He is not regarded as a buteher if he does the one, why should he be ealled a market gardener if he does the other?" If it were a question of surplus only the matter might be regarded in a little different light from what is now by those most deeply eoneerned; but when, as is the ease nowadays, we have gardeners to noble lords issuing eatalogues, just as those in trade do, the time has arrived for speaking out on the subjeet. The "mean" part (if any) of the transaetion comes in at this point, that such private growers are not put on the same footing with regard to assessment of rates as the less favoured, in this respect, trade growers and nurserymen. There would appear to be an injustiee here, though possibly it may not be diseernible by your esteemed eorrespondent above referred to.—Justitia.

GROS COLMAN GRAPE

Mr. J. H. Goodacre having sent us an excellent photograph by Mr. W. Winter, Derby, of a buneh of Gros Colman Grape, we have had it reproduced by a process that displays the faults equally with the merits of the subjeet. As many of our readers who have seen the best examples of Elvaston Grapes at exhibitions know, the bunch and its berries are not so large as some that have been staged, but our page did not permit of a larger, and the present one suffices for showing a fair sample of the work of the cultivator. The Grapes were covered with a dense bloom, some of whieh, as will be seen, has been rubbed off, and in that respeet the bunch is faulty, and it also eontains a few small berries towards the top; still, with all its faults, the bunch is ereditable to the grower, and is sueh that not a few persons would be satisfied with as representative of their crop of this handsome Grape. Accompanying the photograph was the following cultural note. We have another eommunieation from Mr. Goodaere on "Fallacies in Grape Culture," with whieh all cultivators may not perhaps entirely agree, but for that artiele we cannot find room at present.

Gros Colman when well grown is the handsomest of all blaek Grapes. When grown with fire heat and allowed to hang on the Vines a couple of months after the fruit is eoloured the flavour is not so bad as is frequently represented, and it is probable that this variety is destined to be more extensively eultivated than all other Grapes put together; the appearanee is so grand that it more than counterbalances any little defieieney of flavour. We are told that Grapes are grown to eat, and in my ease they are also grown to look at, and I find a keen eye is quite as diffieult to satisfy as a keen palate. At the present time good "Colmans" are realising eonsiderably more money in the market than any blaek Grapes.

The aeeompauying photograph represents what can be grown without mueh diffieulty. The buneh is one of fourteen cut from a Vine the weight of the erop being 40 lbs. Some of the berries are 5 inches in eircumferenee, and are fairly well coloured. Last year the same Vine earried seventeen bunches, the berries larger and much better in eolour. Why this should be so I am unable to judge, unless the excessive heat of last summer ripened them prematurely.

The Vine in question is growing near a water tank, which some of my friends eonsider the secret; but when this tank was kept full the berries did not eolour, so the last two seasons it has been kept empty, with more favourable results. The Vine is planted in pure loam from a hill side, not a partiele of any other ingredient being used with it. We start the Vines early in Mareh with fire heat, and commence thinning these "Colmans" almost before the flowers expand. We give a few good soakings of weak liquid manure from the farm, the first when the berries are the size of peas, the last when they show signs of eolouring. About four doses are suffieient for our very stiff soil. In another vinery Gros Colman eolours as black as jet without fire heat, but they lack sweetness and are not relished like those grown with fire heat.

In writing the above, I hope I have suceeeded in my endeavour to avoid self-exaltation, but it is diffieult to stop all the holes in one's eoat; be that as it may, no notiee will be taken of pseudonyms, but all *bona fide* inquirers will be gladly answered by—J. H. Goodacre, *Elvaston*.

UNDER GARDENERS AND EXHIBITORS.

Your eorrespondent, "An Under Gardener," argues well for under gardeners, but I cannot help thinking he is giving us the darkest side of the pieture. When a subordinate I have frequently had to assist in exhibiting, and on two notable oeeasions was not permitted to leave the group of plants we had staged until the show elosed at 9 P.M.; but if my memory serves me truly, I raised no objeetion to my task, eonsidering myself amply repaid with the insight I reeeived in staging plants and many other things, not ineluding the valuable lessons I had learnt in the gardens on growing for exhibition. Your eorrespondent does not think this experienee valuable—he may one day have a different tale to tell us—being under the impression that gardeners who grow for exhibition are only men "who ean grow a few things superlatively well." Now that I contend is an erroneous idea, for in good exhibition places is

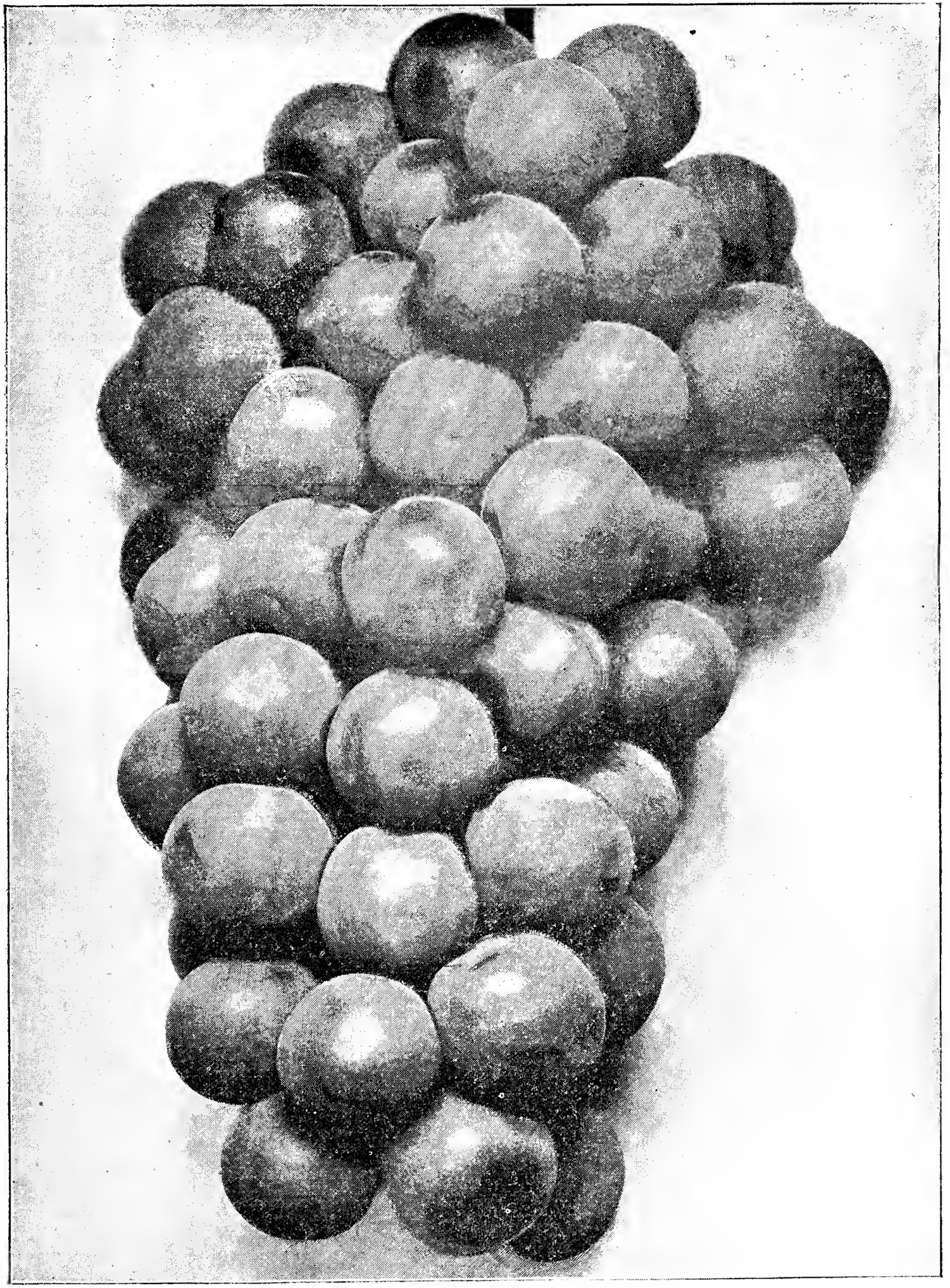


FIG. 11.—GROS COLMAN GRAPE, GROWN BY MR. J. H. GOODACRE

generally found the best all-round gardening, competing as they do in all classes. I may be met with the rejoinder that under gardeners, being generally restricted to one department for a given time, have no facilities for acquiring experience in other branches; if so, I reply I have never known the head gardener who, if his men conducted themselves aright, did not give under gardeners the opportunity of passing through all the departments, remaining in each for a year, and longer, if they choose to stay. "Under Gardener" is strangely reticent anent the suggestion of "A Head Gardener," that when the value of prizes taken will not cover expenses, will the young men contribute towards doing so? For in many cases when shows are at a great distance the prize money is not nearly sufficient for that purpose; in such cases it may be seen at a glance they compete for the post of honour and not for the mere value of the prize. To their credit be it said gardeners as a rule are not so mercenary as your correspondent represents them to be. Finally, he raises objections to the concluding remarks of descriptions of gardens in horticultural papers because the entire credit is given to the head gardener, while none is given the assistants; and who, permit me to ask, is the credit due to, if not to the head gardener? Without assistants I admit he could do but little; but who is responsible for all the garden contains? Who directs the work of the garden in its proper course? Even though he may do no manual labour he works harder with his brains than all his assistants combined. His life is doubtless imagined an enviable one; take my word for it that his bed is not all Roses, but composed largely of thorns. In conclusion, I would advise "An Under Gardener" to bear his troubles like a man, and not get up an agitation among his colleagues, and remember that if he does his work willingly he will at some time receive his reward, when I hope he will not forget his motto, "Do as you would be done by;" also bearing in mind that much as he may object to extra work without tangible acknowledgment that there are numbers of young gardeners waiting for places, who would accept the post without hesitation. Dissatisfaction will injure his reputation eventually, and though he may consider this fault a small thing he must remember his own words, "Life is made up of small things."—R. WELLER.

RANDOM NOTES.

LAST September, when visiting Trentham Hall Gardens, I was much struck with the splendid health of the numerous cool Orchids, especially the Odontoglossums. Though rather late in the year to see many of the latter in bloom there were still some fine varieties in flower. A photograph taken when the Odontoglossums were in bloom was shown me by Mr. Blair, and it made me wish to see the house when in full beauty. The spikes were enormous, and the individual flowers all that could be desired in regard to size, shape, and markings. Mr. Blair is not easily satisfied as regards the quality of the Odontoglossums he grows, and only the first-rate forms are to be found in the collection he cultivates so well.

General gardening is well carried on at Trentham, and large quantities of fruit, plants, and cut bloom, all of good quality, are produced in the numerous houses. Not content with the already large amount of glass at Trentham, Mr. Blair was having some more large houses erected at the time of my visit. A beautiful drive of five miles or so in company with Mr. Blair brought me to Keele Hall, where much to interest and instruct was to be seen. The view from the gardens is most extensive and beautiful.

Another day I had the pleasure of visiting Eaton Hall, the princely seat of the Duke of Westminster, near Chester. The glass houses at Eaton are very numerous and of the most substantial construction, no expense having been spared. Large quantities of all kinds of fruits, plants, and flowers are here grown, and Mr. Selwood is evidently quite prepared at all times to meet the great demands on the resources of the gardens that are made by the hospitable and wealthy owner of this most splendid place.

A day was also spent in Liverpool and vicinity was well repaid by a hearty welcome and much kind treatment received from Messrs. Ker. Mr. Ker took me to see the firm's well-stocked houses and nursery grounds at Aigburth. Here amongst other things excellently grown, I took especial note of some houses of Cyclamens, large numbers of strong and short-jointed pot Vines, and a house of Crotons that could not be surpassed for health and colour. I felt quite repaid by the sight of this grand collection of Crotons, and would have liked to have spent a much longer time in admiring them.

At Mr. Heine's residence in Manchester a wonderful collection of specimen Orchids is to be seen. At the time of my visit there were not many in flower, as most of the blooms had been cut a few days before and exhibited at the Flower Show held in connection with the Great Exhibition in Manchester. Anyone who saw the stands of Orchid trusses that Mr. Heine exhibited at that Show will not forget them in a hurry. They were superb, and a crowd was continually round them. For luxuriant health the Orchids at Mr. Heine's are remarkable. Enormous plants of almost every good variety of the various branches of the Orchid family are here grown, and all flourishing in grand style. The only thing I saw amiss was that the houses were not by any means numerous enough to hold the plants in such a way as would enable one to see them to full advantage. The collection would easily fill nearly as many houses again and then not be too thinly disposed. Mr. Cragg seems thoroughly at home in Orchid culture, and may well be proud of the grand collection.—J. T.

POINSETTIA CULTURE MADE EASY.

AT this time of year many gardeners will have a number of Poinsettia plants which have flowered, that they will feel inclined to throw away; if these are kept in some shed or greenhouse until next spring where the frost is excluded they may be turned to good advantage for next winter's floral display by a very simple and easy method. Let them retain all their old growth till about the end of the second week in May, and then cut them well back, and let them still remain where they have been wintered. By about the end of May they will have begun to grow again. Then shake them out of their pots and plant them in a sunny outdoor border, putting some leaf soil around the roots of each plant. About the third week in August lift the plants carefully and pot them. Place them in a cold pit or frame, and keep them close and shaded from the sun for a week or so, then gradually give air and light. Grow them in the usual way, and there will be no lack of scarlet bracts for Christmas and New Year decorations.—C. DENNING.

THE SEED SUPPLY.

PERHAPS there are few greater mistakes, and they occur every year, than deferring the ordering of seeds till the last moment, or until the time has arrived for sowing, and when the ground and weather are favourable for the work. Experienced gardeners who are free to act in providing garden requisites take care to have everything in readiness when the moment for action arrives; but many owners of gardens who give personal attention to these matters cannot of necessity perceive the importance of early action in providing seeds. These cost no more to purchase early than late, and further, the earlier the application the better the choice. By waiting till the actual time of sowing the weather may change and be unfavourable for weeks by the time the seeds arrive, late crops or lost crops being the unpleasant result. Though the operatives in seed warehouses work almost night and day in the execution of orders that arrive in shoals during bright weather in spring, they cannot all be completed and dispatched with the expected promptitude; and it would be to the advantage of all concerned, purchasers and vendors, workers in the garden and the warehouse, if seeds were more generally ordered a few weeks before they are required for sowing, thus insuring their being ready to hand for the gardener to take advantage of opportunities, which are often of very short duration, for placing them in the ground at the proper time and under the best conditions for insuring a good return in the form of thrifty plants and satisfactory crops. There is danger in delay in this matter, as hundreds of gardeners, of whom I am one, know to their great disappointment.—A. D. M.

MEMORIES OF A TOUR.

MARGAM.

I HAVE been interrupted in jotting down a few memories of South Wales, with the inevitable result of some of them becoming obscured and others vanishing, but a few cannot be easily obliterated. I suspect no wandering gardener could enjoy a day or two's rest with Mr. J. Muir at Margam and forget everything that was seen there, and particularly the hospitalities dispensed by the presiding genius of the lean-to house. The "lean-to," let it be said, is not a vinery, but the gardener's cottage, which in some far past years was erected against a lofty wall which appears to have been built for displaying on the other side, facing the pleasure grounds, some fine examples of Inigo Jones' architecture. But I have made a mistake, not about the house, but the resting. I cannot conceive it possible that Mr. Muir will allow anyone to "rest" long. Strong, active, energetic, accustomed to rush to and fro, up hill and down, over some hundreds or thousands of acres of land in his charge, he seems able to laugh at fatigue, and to rejoice in seeing a fellow mortal seeking rest, "done up" with his exertions. No, I shall not forget Margam. Seeing a stiff and foot-sore pilgrim, he proposes a remedy in this wise, "Come on, I want to go to some men where you hav'n't been yet; a short walk will do you good, it's only just over there." If anyone is tempted to go "just over there" at Margam he will perhaps find a four or five miles journey before he gets home again, the leader going as if he were fetching a doctor, and without a spark of pity for the panting victim he has allured limping along beside or behind him. We get back to the lean-to, and he says to the weary one, "Now you go in and have a good rest while I go round the garden." A "good rest!" In ten minutes he is back again dragging us out—for Mrs. Tourist has to go this time—"You must go up the hill or you will not see Margam at all; it's quite easy, I am sure you will like it." After making us feel as if he had a hydraulic lift to hoist us up in comfort, he prevails, and we enter the wood, for it is a wooded hill, and now commences this easy promenade. We twist about along the mountain side, now stumbling over a boulder, next getting entangled amongst brackens and Brambles, anon slipping into a rabbit hole, then resting on a prostrate tree, and so we struggle on higher and higher. "Only a few inches more," says the tempter, "and we shall be above the trees." And so we persevered and had a reward. We look down on the mansion, a great pile with its lofty central tower when viewed from the base, but now resembling a game-keeper's lodge with a rather prominent chimney, and the eye sweeps across the Vale of Glamorgan from the Severn to the sea. It is a splendid panorama. We thread our way down the pathless slope, and instead of taking us to the lean-to, we are adroitly led into a garden, and after shouting for a fork as if there were a lion

in the path, the man of energy commences tearing up "Laxton's Potatoes." The crops of several of them were remarkable; a few tubers of one of the varieties, No. 8 I think, were cooked, and the quality equalled their good appearance. But I do not like trials under numbers neither in private nor public gardens. Describing the varieties is very much like writing in the dark, so I will say no more about these novelties; but while on the subject of Potatoes may remark on the crop of Adirondack, then just dug, and that would at the least equal 20 tons per acre, and probably 25 tons, of fine pinkish rough-skinned tubers.

The kitchen garden of 4 or 5 acres was as well cropped with as fine a lot of vegetables as could be desired, Leeks and Laxton's Czar Kidney Beans being of enormous size, while fruit both on wall trees and as bushes was abundant. The glass structures are ancient, mostly flue-heated. They are not grumbled about, but made the best of in producing a good family supply of Grapes, exeellent Pines, various decorative plants, and Tomatoes. The erop of these in a lean-to house was worth more than the structure if all had been sold. The variety most grown was Webb's Sensation, a wonderful erop of grand fruits. This has been deseribed as synonymous with the Stamfordian and some others. All I have to say on that point is, I have seen what was named and grown as Stamfordian at the least a hundred times in different chapter-house pillars still solid, Gothic windows still in order, and trees growing out of the top of some of the walls—fancy all this diversity, this blending of architectural with arboreal beauty, and a erude idea may be formed of the attractions of Margam. The church in the grounds is also a notable feature, as it is part of the abbey of the Cistertian monks, founded by Robert Earl of Gloucester in 1147. Now go on still further eastward and through the vista formed by noble trees you see the mansion on the rising ground beyond, and reaeh it by an ascent of broad and high flights of steps at intervals on the way. It is a stately building with a lofty central tower and a terrac d garden in front. It was erected by the present owner about fifty years ago. Through the kindness of Mrs. Gittens, the courteous housekeeper, we were favoured with a "peep" inside, and found evidence of wealth and taste, without glare and glitter, in keeping with the fine exterior and grand surround ings. The genealogical stained glass window in the hall, divided into twenty eircular memorial compartments, giving the names, births, and deaths of the several owners from John Mansel in 1100, throu gh eighteen generations to the present owner, is unique. It shows that the male line of the family terminated with Lord Mansel in 1661, thence the great possessions passed by marriage into the Talbot family, the present head of which, C. R. Mansel Talbot, Esq., M.P.,

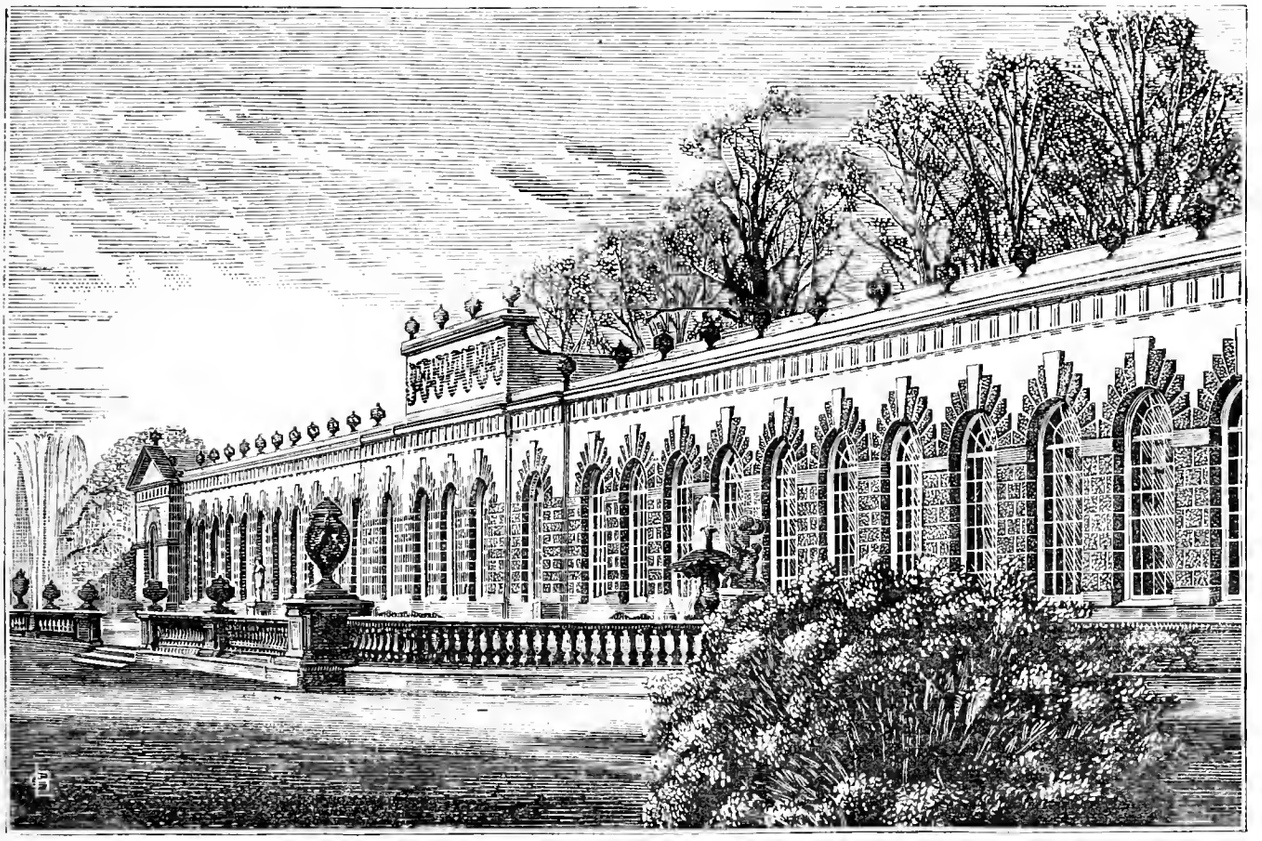


FIG. 12.—THE ORANGERY AT MARGAM.

places, but never saw it like the large and perfectly smooth fruits at Margam. In the same house were some red and yellow-shaped Plum-shaped varieties from Messrs. Sutton & Sons, the fruit hanging in long elusters, and in the raw state the flavour surpassed all others. Such fruits would make beautiful dishes on a dessert table, and could not well be exeelled for salads.

Well as what may be termed the supply department of Margam is eonducted, the pleasure grounds, fine and beautifully situated mansion, with a magnificent background of Oak-clad hills, rising abruptly to a height of 600 feet, must leave the deepest impress on the mind of the visitor, whoever he may be. There is a natural grandeur about these wooded heights that cannot be described, while the dressed grounds at the foot, half a mile or so long, but not of great width, are beautiful by, so to say, their irregularity. There has been no levelling to destroy the undulations of the lawn, and magnificent deciduous trees and splendid evergreens and flowering shrubs seem as if they had sprung up naturally just in the right places. Fancy Sweet Bays 50 or 60 feet high and more in diameter, Camellias nearly as high, Tulip Trees 70 or 80 feet high, handsome Conifers here and there, bold clumps of Amerieau Azaleas, numerous huge masses of Hydrangeas 2 or 3 yards high and of twiee that diameter, weighted down with the load of flowers, some pink and others of deepest blue; then at one end of the grounds an Orange grove, the trees throwing their fruit-laden branches over your head; more towards the eentre the finest orangery in the kingdom, and a grand feature of the grounds whether the fountains near it play or not; then onwards and eastwards a romantic ruin the well-cared-for remains of the home of t'e monks of old, the massive being eighty-five or eighty-six years of age, with a step as firm and eye as clear as ever; but his only son died, and was mourned by all around, a dozen years ago. Miss Talbot is the good genius of the home now, her only sister living being married to Mr. J. Fleteher, of Salton, N.B. Mr. Talbot, as is generally known, is the father of the House of Commons, of whieh he has been a member for nearly sixty years. Mr. and Miss Talbot usually arriving home from their yachting eruise towards the end of September, Mr. Muir endeavours to have the flower beds on the terrace attractive then; and the large masses of Sedum speetabile and the most useful yellow Chrysanthemum, Felicity, produced, with the relief afforded by Perilla and margins of Golden Feather, an excellent effect.

But we must return to the orangery. It has been represented in the Journal, but there have been several yearly additions of new readers since then who will be glad to see what the building is like, and those who have seen it before will admit it is worth seeing again. It is upwards of 350 feet long, 30 feet wide, and 24 feet high; the trees, which are in large tubs, being arranged in it in October for the winter, and placed in the garden in spring. Several of them are 300 years old, the ship that was bringing them as a present to Queen Mary or Queen Elizabeth, being stranded on the foreshore, became the property f the Mansel family. They are in th best of health, and there is no fear of their suffering through want of attention in Mr. Muir's keeping. He was drying Tobacco in the orangery in September, and in November I had a sample, manufactured from it by Mr. Wills of Bristol, in the form of eigars, cigarettes, shag, and birdseye, as good probably as has been made from home-grown "leaf;" but in no form could the produce

compare in quality with that grown in the more favourable climes of southern latitudes, and I have yet to be converted into the belief that Tobacco growing will be a commercial success in this country.

Orange, Lemon, and Lime trees of great age and size cover the back wall of a long lean-to house in the pleasure grounds, the body of the house being occupied with Camellias, also old and large, yet vigorous, many Tea Roses being grown in the same structure, and at one end as healthy a plant as has been seen of Magnolia fuscata in a pot in a shaded alcove, from which it is never removed. It flowers profusely, and fills the house with fragrance. At the opposite end of the house Solanum jasminoides is established, and grows right through the roof, its flowers hanging down in wreaths, and of a size I have never seen equalled, nor had Mr. W. Watson of Kew, who was my co-admirer of it, and who pronounced Margam as his ideal of a garden. It is a grand old place without a doubt, and Mr. Muir, as its manager, is the right man in it. His duties, however, extend far beyond the garden, and in an important work he has scored a triumph, in clothing with vegetation some 2000 acres of sand blown from the beach into a long and broad range of hills, but ever shifting and eating up the land. He has stopped it, and I, for the present, must stop too.—A Tourist.

THE CAULIFLOWER SUPPLY.

A good Cauliflower supply is appreciated in most establishments, but in dry and hot seasons like the past many of the plants have an annoying tendency to "button," especially where the ground is poor or not deeply worked. On light land a deeply worked and well-manured soil is essential, for if the season should prove dry a collapse is certain if the above conditions are not secured. During the past season we were rather fortunate in our supply, and especially so from the commencement of September onwards. These were grown on ground that had previously been occupied with Celery, and as this had been well manured and worked it was in good condition for the crop. Many failures are due to the young plants not being properly prepared in the first instance. The seed is often sown too thickly and the plants spindle before being pricked out, and are then pulled up and planted with a dibber, leaving the fibrous roots behind, thereby losing time and often courting failure. I have great faith in sowing the seed thinly and pricking out the plants when large enough into a frame, and into good loam that will hold together, and manure, say equal parts of each, which will cause the roots to become fibrous and plentiful. When planting time arrives each may be taken up with a good sized ball and planted with a trowel, when after a good soaking of water they will barely feel the shift.

I am very much averse to planting Cauliflowers on the level. In all cases we cut out a deep drill as if for Potatoes, which gives shelter, especially so in the case of the early supply; they also have the benefit of the water direct to the roots as well as rain. When the plants are about half-grown the ridges may be levelled in with the hoe about the stems, which keeps them firm. When planted on the level and earthed up very little water reaches the roots. These drills are also very useful for the second supply, as if the season should prove dry these require occasional soakings of water, and if at command liquid manure or sewage.

Eclipse and Veitch's Autumn Giant are grand Cauliflowers, one succeeding the other if sown at the same time, but in many districts they are sown too late to grow to any size or do much good before the frosts come. For our earliest supply we depend upon Early Dwarf Erfurt, Early London, and Large Asiatic, which succeed one another. The seeds are sown thinly on a west border the first week in September, and when large enough are dibbled out into a cold frame about a foot from the glass. There they remain through the winter, receiving air on all favourable occasions, and being protected from frost. Early in April they are planted out, the Early Erfurt on a warm border for the early supply, and the others for the main supply in the open. If handlights are at command these could be placed over a part of the early ones, which will hasten them on. To succeed these, about the middle of February a little seed is sown thinly in a box and placed in a slight warmth. A vinery just started will do admirably, and as soon as the seed germinates the box is placed in a cool house close to the glass or in a cold frame, but take care to protect from frost. This will cause the plants to become sturdy. When ready these are pricked out into a roughly made frame 4 inches apart and 6 inches between the rows, and as they become established are ventilated freely and hardened, taking care to protect from frost. When ready they are planted out. Eclipse, Autumn Giant, and Veitch's Self-Protecting are the main autumn varieties. The seed is sown thinly in boxes and treated precisely as the former, but the plants are allowed a little more space when pricked out. When ready for planting a thorough soaking of water is given the night previous. We allow 30 inches between the plants in the rows, and 2 feet 9 inches between the rows. Of course showery weather is the best time to select for planting them out, but last season that was out of the question, and they only had a thorough watering at planting time and about twice afterwards, though they did remarkably well. The ground was kept well stirred with the hoe. I ought to have mentioned that we had a sowing of Veitch's Self-Protecting the first week in April in the open border. These were planted out when ready, and came in very useful about the middle of November up till nearly Christmas. If the weather had been severe these would have been lifted and planted in pits.—A. Young.



YELLOW SPORT FROM MRS. HEALE.

In answer to "An Exhibitor," I wish to state that we hold here, where it originated, the entire stock of that beautiful variety, which received a first-class certificate at Bath, November 9th, 1887. The colour is a deep primrose. I must also state that it is not in commerce at the present, and will not be this season. The stock being very small we intend growing it again before finally disposing of it. I am highly pleased that "An Exhibitor" has taken the trouble to make inquiries, as he evidently knows the value of the sport.—F. R. Hayes, *Gardener, Woodville, Keighley, Yorks.*

CHRYSANTHEMUM GOLDEN GEM.

Those of my brother gardeners that have not yet had the above variety in addition to their Chrysanthemums would do well to obtain it. For the decoration of house and conservatory it is highly valuable throughout January, being of a robust dwarf habit, retaining its foliage well to the time of its flowering. Those who have grown it well are most thankful for its production by Mr. Owen, the Floral Nursery, Maidenhead, who has it in its true character.—H. Vickery, *Huntsmoor Park, Iver, Bucks.*

A CATALOGUE OF CHRYSANTHEMUMS.

It is announced that the National Chrysanthemum Society intends undertaking the production of a Catalogue of Chrysanthemums during the present year, and if they do it is to be hoped the task will be performed in such a way that it will be useful to growers and creditable to the Society. What we require is an authoritative list as full as possible that we can turn to as a reliable guide, and this could surely be accomplished by the Society named better than by any other. To ensure its success it must, however, be the work of the whole Society, and not the production of two or three members, utilise as far as possible the information obtainable from all the members of the Society, and then, with a good system of condensation and arrangement, a standard work of great value will be produced.—M. N. C. S.

SECRETARIES JUDGING AND SHOWING.

Some attention has been called to the fact that the Secretaries of Chrysanthemum and other societies occasionally either exhibit or assist in judging at the shows under their management, and I should like to know the opinion of some of your readers upon the subject. There is no question that in the majority of cases the gentlemen who perform the very arduous duties of Secretaries are above any suspicion of unfairness, but their position necessarily gives them such opportunities for knowing who are the exhibitors of the particular produce to be judged, also the number of competitors in the several classes, that their acting in any way outside their strictly official duties is apt to give rise to unfavourable comments. The question is, whether it is desirable, in the interest of horticultural societies, that Secretaries should either compete or judge at their own shows.—A Provincial Exhibitor.

EXHIBITING CHRYSANTHEMUMS.

It is possible that "Wraith," in your last issue, may represent the feelings of a few gentlemen, but I am persuaded he does not represent those of the majority. Some do not like to see their names associated with every insignificant prize their gardeners may win, and rightly regard competition at shows as an encouragement to those who are working for them. If an owner desires his name to appear no sensible gardener would wish to suppress it, and the rule adopted by most societies is to give on their prize cards the names and addresses as they are received on the entry forms. That is the practice with the National Chrysanthemum Society, and official lists thus prepared at special request have been occasionally supplied to one of the gardening papers for gratuitous insertion as an advertisement.—A Member of the National Society.

CHRYSANTHEMUM EXQUISITE.

I should be glad to know whether any readers of the Journal who have grown Chrysanthemum Exquisite have found it to be fragrant. In consequence of this variety being mentioned in the Journal last spring as a scented one I procured it, but have not found a vestige of scent. Most of the fragrant Chrysanthemums appear to lose their odour after they are about half expanded. Mrs. Langtry, however, and probably other single varieties, are exceptions to this.—R. Falconer Jameson.

IMPRESSIONS AND OBSERVATIONS.

I DID not finish my self-imposed task last week of glancing through the first January number of the Journal and jotting down a few impressions, the result of reading the different articles. The subject of packing fruit, which was "mentioned," is one of great importance, and is only referred to now for making an observation founded on experience. The best of fruit may be spoiled by bad packing, and its value brought down 500 per cent. in twenty-four hours. Some time ago I was prospecting a very large house and very fine crop of Black Hamburgh Grapes. These were grown by an amateur purposely for sale, and he was then selling the fruit in his district for 2s. a pound. At that price it paid him very well, but he anticipated a fall of 6d. a pound, and as he had observed the Covent Garden Market prices, and thought his Grapes as good as any he had seen in London, resolved to send a large consignment there. I endeavoured to dissuade him, pointing out the liability to injury in transit and a possibly overladen market bringing down values, but all I could do was to induce him to make his first consignment smaller than he projected; and as I knew to whom he was sending the Grapes—a fruiterer of high standing, dealing direct with consumers, there was no difficulty in arranging that I should see the cases opened; indeed, the consignee was only too glad for me to do so. It was a sorry sight to see the "rubbed" and shaken Grapes, some having been broken, and the whole having a bedraggled appearance. Would I give 6d. a pound for them? was the question asked, and only a negative reply could be given. "In this case," remarked the fruiterer, "I will not offer a price, but as the lot is small will have the Grapes sorted and make the best of them, sending the man the money in full and request him not to send me any more Grapes." The best were sold for 6d. a pound, some for 4d., and some were unsaleable. The fruit could have been sold for 1s. 6d. a pound at home. The best Black Hamburghs in the same shop with these damaged Grapes were being sold for 2s. The loss indicated was caused wholly by bad packing, as thousands of pounds are lost yearly in the transit of tender fruit long distances to its destination. Old hands do not make such blunders, and if Mr. Pettigrew's article on page 8, and this comment thereon, with the example given, lead to greater care in the work under discussion we shall not have written in vain.

I CAME across an old story the other day of a Scottish "daft" breathlessly running, as he explained to an interrupter, to the funeral of his relative Lord Somebody. On being told his lordship was alive, Jock observed, he "didna care for that, there were sax doctors at him, and he would be deid before he (the daft) got to his journey's end." That is the gist of the tale as I remember it. It reminded me of the doctors who have been consulting over the case of the Royal Horticultural Society and prescribing accordingly. It must be supposed that "Dr. Masters' Committee" have been instrumental in nominating the four gentlemen, whose names are published on page 41, for filling the vacancies of the retiring members of the Council; at least, if they have not done so, they have done nothing that the public yet know about. Let it be assumed that all the nominees are fit and proper persons for the position to which they are introduced, as others might be who are passed, then we find three out of the four of the nominees for the Council also members of the Consultative Committee, which looks very much as if they had been engaged in nominating one another. The interesting lesson to be learned from the results of the deliberation of the Council's advisers appears to be this—If you wish to push yourself into prominence take an active part in passing resolutions and getting on a reforming Committee.

WITH a sincere wish for the prosperity of the Royal Horticultural Society, and doing my little best to assist by adverse criticism and otherwise, I am very far from satisfied with the constitution, as proposed, of the new Council, and, so far, fail to see that the special committee have done an atom of good. The "trade" is represented on it, it is true, or one section of the trade, for the two nominees are not only both nurserymen, but practically London nurserymen. The country trade is ignored, the important manufacturing trade is ignored, the seed trade is ignored, and the great body of professional gardeners is ignored. Whether this is the result of the action of the Council or of their advisers, or both, matters not; the fact remains that the Council is not fairly representative; and I do not hesitate to express an opinion that I am positive is shared by many, that it would be better to have no traders in the governing body than to have such a one-sided arrangement as is proposed. One representative of London and one of provincial nurserymen, one of the seed and one of the manufacturing trade, with two professional gardeners of good standing, leaving nine seats for independent gentlemen of business capacity and scientific attainments, including Dr. Masters and Mr. Hibberd, would be a much better balancing of all the interests that are identified with the work of which the Society is, or ought to be, the head, and by which it should be supported. A high policy of excluding professionals, or a liberal policy including all the branches, would be intelligible, and either one preferable to the half-hearted scheme that is indicated in the nominations that will only satisfy the minority. The support of the majority is wanted, and this cannot be had without securing their sympathy. The gardeners of the kingdom may be the best helpers in advancing the interests of the Society and gaining for it supporters, or the reverse. Many will be sorry to see their existence is not recognised in the projected scheme of remodelling the directorate, and it is a pity they were so carefully excluded from the Consulting Committee that was proposed and appointed in December. This is all I have to say this week, and it is perhaps as much as is wanted.—SPECTATOR.



EVENTS OF THE WEEK.—The following are the principal meetings during the week, from January 26th to February 1st. Thursday, 26th inst., Meeting of the Royal Society at 4.30 P.M.; Friday, the 27th, The Quekett Microscopical Club at 8 P.M.; Saturday, the 28th, The Royal Botanic Society, Regent's Park, at 3.45 P.M.; Wednesday, February 1st The Society of Arts, at 8 P.M.

—— THE schedule of prizes of the GREAT YORK GALA for the current year's June exhibition is just issued, and over £600 is offered in prizes. For Roses in pots and for cut blooms £123 is offered, about £50 for Orchids, which include special prizes from Messrs. Backhouse and Son, £104 10s. for the various classes of Pelargoniums, £60 for fruit, including good prizes for a collection, and special prizes for Pansies, Violas, double and single Pyrethrums, &c.

—— WE are requested to announce that Her Majesty's First Commissioner of Works has entrusted MESSRS. OAKSHOTT & MILLARD, Seedsmen to the Queen, Reading, with the order for supplying Grass seeds for the Royal parks.

—— THE WEATHER.—"B. D." sends this note on the weather in the north from the 16th to the 23rd January. "A variable week of frost, fog, and fine weather. The bat was flitting about on the evening of the 16th. Frost occurred on nights of the 18th and 19th, when 9° and 2° were registered, followed by a dense fog on the afternoon and night of the 20th. The 22nd was a really fine day with west wind; bees were enticed out here and there by the sunshine. Snowdrops in bloom." In the neighbourhood of London the weather has been dull, with little sunshine until Monday, which was a clear bright day. The temperature has varied from 28° to 40° at night.

—— ON Saturday last the heads of departments and clerks engaged at MESSRS. WEBB'S ROYAL SEED ESTABLISHMENT, WORDSLEY, STOURBRIDGE, had their usual annual banquet at the Mitre Hotel, Stourbridge. About fifty were present, and after justice had been done to the excellent repast provided, Mr. J. P. Hitchings was, in the absence of the principals, voted to the chair, and an enjoyable programme of vocal and instrumental music was gone through. The toast, "Success to Messrs. Webb & Sons," given by the Chairman and responded to by Mr. Berrington, was enthusiastically received.

—— MR. E. BUTTS, Leigham Court Gardens, Streatham Hill, writes:—"Permit me to add a few words to your very brief notice of MR. MCLAURIN'S death. He was for upwards of thirty years gardener and manager of the outdoor department generally on the Farnborough Hill estate. For nearly a quarter of a century he was the trusted servant of the late Thomas Longman, Esq. After that gentleman's death the estate passed into the hands of the ex-Empress Eugenie, Mr. McLaurin still retaining his post and enjoying the same confidence as with his former employer. During Mr. McLaurin's stay at Farnborough Hill the gardening part of the establishment underwent a complete change; new grounds were laid out a new kitchen garden was made, and a new range of forcing houses erected. Few men in a similar position enjoyed more respect than Douglas McLaurin, and with him passed away a fine type of a man. In his young days Mr. McLaurin passed some time in the Sheffield Botanic Gardens (I believe under Mr. Marnock), and also at Putteridge Park, under the late Mr. Robert Fish."

—— BOUQUET JUDGING AND EXHIBITING.—A correspondent writes—"I think 'A Learner,' Mr. Chard, Mr. Garner, and 'Amateur Florist' will be pleased to learn that chiefly owing to the articles on bouquet showing lately published in the Journal, the Committee of the Richmond (Surrey) Horticultural Society have fixed the size of bouquets at the forthcoming Summer Show on July 4th as not to exceed 18 inches. Also 'A Gardener' will be glad to know that out of the two classes

previously open to all comers they have reserved one class for gentlemen's gardeners and amateurs only, and the Judges will have instructions on the day of the Show to strictly adhere to this rule and attend to other minor details."

—— We are requested to announce that Mr. C. P. Kinnell (hitherto sole partner in the firm of Chas. P. Kinnell & Co.) has admitted into partnership his brother, Mr. John Kinnell. The style and title of the firm will remain as heretofore. Mr. John Kinnell has been actively associated with the business for the last ten years, and will continue to devote his entire services to the new firm. The offices are 65A, Southwark Street, London, S.E.

—— Birmingham Gardeners' Association.—At the fortnightly meeting of the Association, January 17th, several new members were elected, and Mr. John Pope, nurseryman, Birmingham, read a paper on "Florists and Florists' Flowers," the Auricula, Pansy, Tulip, Pink, Ranunculus, Carnation, and Picotee coming under review, and their properties pointed out. It was a very interesting paper and led to an animated discussion. On the 31st inst. Mr. W. Wildsmith of Heckfield will read a paper on "Flower Gardening."

—— A fourth edition of Mr. Lewis Castle's "Orchids: their Structure, History, and Culture," is being prepared, and the work is also being translated into French and German on the Continent.

—— Setting Grapes.—Mr. Stephen Castle writes—"In reply to Mr. Taylor I only wish to say that I very willingly accept his fuller explanations. I did not object so much to the starvation theory itself as to the evidence by which it was supposed to be supported. My Vines flower for the most part in May and not in April. 'Proprietor' rightly says that I followed in all respects Mr. Taylor's own recommendations for applying lime, as given in 'Vines at Longleat.' Mr. Taylor replies so too. In the case quoted from 'Vines at Longleat,' an unusually heavy dressing of lime was given while the roots were active, but heavy feeding followed. So also at West Lynn."

—— A meeting of the Committee of the Gardeners' Orphan Fund was held on Friday night last at the Caledonian Hotel, Adelphi, London. Present—Mr. G. Deal (in the chair), and Messrs. Barron, Wynne, Woodbridge, Goldring, Williams, Bates, Herbst, Nicholson, Wright, Richards, Roupell, Dean, Laing, Cannell, and Head. Gratifying progress was shown, as since the last meeting contributions were received from nearly 200 persons, through local secretaries, including £25 from Lord Ravelstoke, £10 each from the Baroness Burdett Coutts and Colonel Page, £5 each from the Leeds Paxton Society and the Bradford Gardeners' Mutual Improvement Society, with other sums that will be announced in our advertising columns. The total sum promised amounts to £1400, of which £1034 15s. have been received. A vote of thanks was recorded to the local secretaries for their effective co-operation. It was decided to hold the committee meetings on the last Friday in every month, at which any of the local secretaries who could make it convenient to attend would be cordially welcomed. Forms of applications for candidates, contract, and nomination, as prepared by the sub-committee, were passed, and in due time may be had from the general or local secretaries, applications for the benefits of the Fund to reach Mr. Barron not later than April 23rd; the annual general meeting and election to be held on Friday, July 13th, at the Cannon Street Hotel. A most hopeful tone pervaded the meeting, and with the continued efforts of widely scattered friends in support of the Fund, it cannot fail to become a great and important institution, fraught with much benefit to the children of misfortune for whose succour it is established. Through a clerical error a correspondent referred to the Fund, in an article in the Journal last week, as the Gardeners' "Orphanage," which implies the erection of a building, and we are desired to state that there is no intention whatever to apply the money subscribed to any such purpose.

—— A London evening paper has the following note on Collecting Daffodils:—"Lovers of Daffodils will be pleased to know that, encouraged by the success of his visit to Portugal last spring, Mr. Barr proposes to start early in February for a real Daffodil hunt through Northern Spain. He will ransack the mountains from San Sebastian to Vigo, and doubtless settle some vexed questions in regard to the Narcissi of the Peninsula. He may have some adventures too. Last year he was kept in view for some time by the Spanish police, and was within an ace of being arrested in mistake for the Republican chieftain, Don Ruiz Zorilla, there being probably in all the world no two individuals more utterly different in tastes, manners, and appearance than the great revolutionary bourgeois and the distinguished British bulb-collector."

DESTROYING INSECTS.

Messrs. Corry, Soper, Fowler & Co. have sent us samples of their new Lethorion or vapour cone that they are now advertising as a certain method of destroying insects without injuring the most delicate plants. The contrivance is quite new. A small bottle is enclosed in the cone, and when the top of this is lighted the fire gradually spreads downwards, till the heat is sufficient for diffusing the contents of the

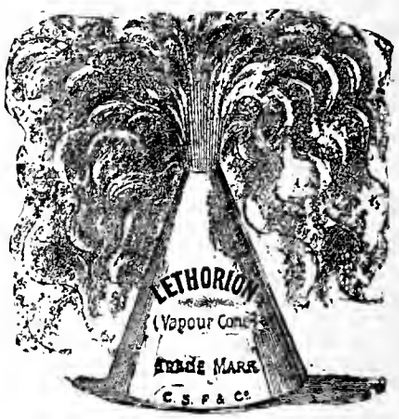


Fig. 13.

bottle in the form of vapour. We lighted a cone in a basement of our office, but the action of the fire was so slow that we felt a little disappointment and "left it to go out." Half an hour afterwards about fifty men were coughing and sneezing, for the vapour found its way everywhere, and there was a general expression of opinion that if there were any insects on the premises before none could be left alive after this experimental fumigating. The Lethorion appears worth trying for the purpose for which it has been devised.

CERTIFICATING OLD FRUITS.

I wish you would dissuade members of the Fruit Committee of the R.H.S. from bringing forward for certificates stale subjects long in the hands of the public. The one good of certificates is to guide the public as to the merits (and then only as to appearance and flavour) of sorts not yet distributed. When distributed the public can judge much better for themselves. On January 10th a first-class certificate was given for Royal Medlar. This was described in the catalogue of the late Mr. Thomas Rivers for 1856 as "a new sort from France." The same description remained in his catalogues till his death in 1877, and was continued afterwards. On August 6th, 1887, a first-class certificate was given for Pear Mdlle. Solange, which had been a considerable time in the hands of the public. The wonder is that a certificate was not also given to the universally grown Gooseberry, Red Champagne, exhibited by the same firm on the same day. Neither Medlar nor Pear was either raised or distributed by the firms which brought them before the meeting.

The Committee of the 1883 Apple Congress, for some inscrutable reason, out of all the Apples exhibited selected Grenadier and Bramley's Seedling for certificates. These had both been for a considerable time in commerce; in fact, of Grenadier I had at that time forty-three trees not less than ten years old planted out in an orchard. Royal Medlar, Mdlle. Solange, and Bramley's Seedling I had, at the time they were certificated, grown for several years. Such being the case I think I should be wrong not to draw attention to the subject. If the certificate is accorded to the fruit only, and not given to the exhibitor, it would show backwardness on the part of the Royal Horticultural Society in finding out the merit of a first-class fruit which has been not less than thirty-one years in the country.—Philomelos.

Tropæolums.—When these are used as climbers they should be renewed annually by young plants. If old ones are retained they often become dirty, and are rendered unsightly nearly all the season by the old foliage turning yellow. Clean healthy plants may be retained for a time until young ones are ready to take their place. In a temperature of 45° to 50° they will not be long before they flower profusely, and where the flowers are appreciated they will be useful for cutting. If young plants were not raised in autumn and wintered in small pots, select healthy cuttings and insert them in sandy soil in small pots and root them in a temperature of 60°. As soon as they are rooted subject them to cooler treatment, or they will grow weakly.—B.



FRUIT FORCING.

VINES.—*Earliest-forced Houses.*—The earliest Vines will require careful attention now. Remove all loose and duplicate bunches, thinning the berries as soon as they are well formed. If there is no fermenting material in the house charge the evaporation troughs with liquid manure, or 1 lb. guano to twenty gallons of water, and the borders and other available surfaces may be sprinkled with the same at the time of closing the house or early in the afternoon. Where results are of more consequence than appearance a portion of the fermenting materials may be removed and the whole of the inside border surfaced with thoroughly sweetened dung from the stables, which should be turned over several times before it is introduced, or the ammonia will be too strong for the tender foliage, which may, however, be obviated by admitting a little air by the top lights to allow any excess of steam to pass off, as it will in a day or two. The inside border before being covered with the sweetened stable litter must have a good supply of tepid water, not exceeding 90°. This with the leaves in an active state will incite root-action, and the berries will swell freely. Avoid cold currents of air, also steam arising from highly heated pipes, both being prolific of rust. The heat of fermenting material on outside borders must not be allowed to decline, but should be renewed as required. Where no fermenting materials are used care should be taken to prevent the roots in outside borders becoming chilled by cold rains or snow, having wooden shutters or tarpaulin so disposed as to throw off the rain or melted snow. Attention will be required in tying the shoots and in stopping the laterals. It is assumed the shoots have been stopped two or more joints beyond the fruit. Where the space is restricted they may have been pinched to one or two joints, and in any case the axillary growths may be stopped at the first leaf, and to one leaf afterwards as fresh growth is made. If this is likely to interfere with the principal leaves the axillary growths may be rubbed off except from the two lowest leaves, those above the fruit being stopped to one joint. It is of the utmost importance that the principal foliage be fully exposed to light and air, overcrowding and overcropping being highly prejudicial; at the same time very close stopping is not to be recommended where there is room for extension, as an increase of foliage promotes corresponding root-action, therefore preserve all the foliage consistent with its full exposure to light.

Early Forced Vines in Pots.—Afford copious supplies of tepid liquid manure. Thin the bunches somewhat freely, so as to induce larger berries, not, however, going to the extreme of making the bunches loose, though that is better than small berried clusters. The temperature should be maintained at 65° at night, falling to 60° on cold mornings, 65° to 70° by day, admitting air at 75°, increasing the temperature with sun heat to 80° or 85°, closing the house at 80° with a prospect of an advance to 85° or 90°, at the same time damping the house. Damping is also necessary in the early part of the day. Great care is necessary in ventilating. During such weather as we have lately experienced air should be admitted in moderate quantity, a little at a time, so as not to reduce the temperature much, but to prevent its rising suddenly.

Houses in which Vines are in bloom should have a steady night temperature of 65°, 70° to 75° by day by artificial means, and 5° to 10° more from sun heat. Muscats 5° higher all round. Black Muscat and other varieties liable to set indifferently may be assisted by tapping the bunches every day, or more certainly by applying ripe pollen, drawing a brush lightly over the bunches. A constant circulation of dry warm air is conducive to a good set, and it is advisable not to stop the growth closely during the setting period.

Vines Started Early in the Year.—Syringe the rods twice a day until the bunches are formed, when it is best discontinued; but maintain atmospheric moisture by damping the paths and borders three times a day. Increase the temperature to 55° at night and 60° to 65° by day, with an advance from sun heat to 75°, with ventilation in accordance with the state of the external air. Avoid damping the hot-water pipes when they are highly heated, the steam arising therefrom being very different from that given off by cooler surfaces. Keep up a supply of ammonia in all the houses by turning over the fermenting materials and adding fresh horse droppings, or if this be objected to the house may be sprinkled with liquid manure, the evaporation troughs being kept filled with the same. Ammonia vapour not only aids the growth and texture of foliage, but is inimical to red spider.

Houses for Affording Ripe Grapes in July.—Start the Vines not later than the beginning of next month. There is no need to cover the outside border with fermenting material, but a covering of leaves or litter is necessary to prevent chill. A bed of fermenting material inside the house conduces to a good break by securing a uniform moisture. Syringe the rods three times a day, maintaining the temperature at 50° at night, and 65° by day with sun heat. Water inside borders with liquid manure at 90°, and repeat as necessary so as to bring the soil into a thoroughly moist state.

THE FLOWER GARDEN AND PLEASURE GROUND.

Tuberous Begonias.—Late in January or early in February is the best time for sowing the seed of Tuberous Begonias. Not only does such minute seed germinate more surely when sown before much hot sunshine and drying winds are experienced, but an early start insures the requisite strong growth before bedding-out time. Fill well-drained pans with light sandy compost, make the surface fairly firm, smooth, and level, cover with silver sand, and moisten thoroughly through a fine-rose pot. When dried somewhat, or say in the course of three hours, sow the seed evenly and carefully, dust a little dry sand over the seed, but do not bury it deeply. Cover closely with a square of glass, and plunge the pans in a gentle hotbed. If shaded, or closely darkened, no water ought to be needed till the seed has germinated. It is the careless watering that is often to blame for failures to raise seedling Begonias, this dislodging the seed when perhaps just on the point of sprouting. Dryness may end equally bad, and if the surface needs moistening at any time, whether before or after germinating, it is most safely accomplished by partially immersing the pans in a tank or pail of tepid water. As soon as the seedlings show themselves thickly all over the pan, gradually dispense with the shading, and wait till rough leaves are formed before pricking off into pans of fine soil. Strong tubers intended for bedding out may be examined and cleared of any decaying stems, but they ought to be kept cool and rather dry for at least another two months.

Lobelias.—Excellent and very reliable strains of bedding Lobelias are sold by the principal seedsmen, and seedlings being much more easily obtained than are plants from cuttings, are now usually solely relied upon. L. Erinus erecta and speciosa are good, and pumila magnifica can also be recommended, these being the most dwarf. Various shades of colour can be bought, but as a rule a good blue is the most serviceable and effective. The Lobelia seed again is very small, and we prepare the pans, sow the seed, and otherwise treat it much the same as advised in the case of Tuberous Begonias. The seed being new and sound will all germinate, and when sown very thickly the seedlings are liable to damp off wholesale. Better, therefore, to sow the seed thinly in two or three pans rather than crowd it together into one. The seedlings ought to be well exposed to the light, and set on a shelf in a lower temperature for a time prior to pricking off. Old plants kept for the purpose of affording a supply of cuttings or for division should be kept in a rather cool house or frame, or otherwise the tops will be spindly, as well much given to flowering. Examine them frequently, and remove any decaying portion, or this will quickly spoil the whole plant.

KITCHEN GARDEN.

THE FIRST CARROT CROP.—If early Carrots are appreciated there will be a general desire to have them ready for drawing as soon as possible. When about the thickness of one's thumb in March or April they are delicious, and all who can muster a hotbed and frame may have them ready then. They are easily grown. A thick substantial hotbed should be formed, place a frame on this, and then fill 8 inches or 10 inches of soil. This should be prepared for the Carrots. Ordinary garden soil will do for part of it, but it should be mixed with a quantity of sand and a little decayed manure. A quantity of soot should also be mixed with the soil before putting it into the frame, as it would never do to go to the expense of preparing a bed and then allow the roots to be destroyed by grubs, but the soot will keep them away. Make the soil firm and smooth, and sow the seed carefully broadcast. As a rule we cover the seed with sand to the depth of 1 inch. Do not give water, as the moisture from the manure will be sufficient. Should much frost come protect by covering the glass lights. The young plants will be visible in a fortnight or so, and then they may be ventilated a little on fine days. French Horn is generally regarded as the best early Carrot, but Sutton's New Early Gem is superior.

BROAD BEANS.—These are not so extensively grown as Peas, but the majority of garden owners desire a few early dishes, and as they grow freely without heat in the open, and come in at a time when early vegetables are not plentiful, a few rows always give satisfaction. For exhibition and main crop Webb's Kinver Mammoth is unique, but it is not so early as Early Mazagan, and a row or two of the latter should be sown for a first crop. We have sown our early Peas on a south border in rows 8 feet or 9 feet apart, and placed a row of Broad Beans between them with good results, and they may also be sown by themselves in any warm corner. From one to two pints of seed will make a good plantation. The ground may be heavy, and it should always be rich. Do not sow deeper than 4 inches below the surface.



PRACTICAL BEE-KEEPING.—No. 28.

THE simplest methods of performing necessary manipulations are ever the most valuable. The saving of time is of itself no inconsiderable matter, and if to simplicity of method is added certainty of success the bee-keeper must indeed be happy. The weary work of introducing queens by the ordinary method is too uncertain to give anything but anxiety to the amateur bee-keeper. Success does generally result if the manipulation is properly performed, but

there is just too much uncertainty on the point to make the operation pleasurable. As in all other manipulations, so when the "direct introduction method" of giving new queens is practised care must be taken not to deviate from instructions until by experiment a better way has been found of achieving a like result. If a bee-keeper tries the direct introduction plan, and neglects to do as his instructions tell him, he must in the first place not expect to succeed, and in the second place must when he fails blame himself and not the method. Amateur bee-keepers, as a rule, are too apt to do as they think best without having sufficient knowledge on a subject to think rightly. It is well for a man to think, but before he can do so he must have a knowledge of the subject upon which he wishes to think, otherwise he may discover that, though in the abstract a man may, knowing nothing, yet think seriously, but in the concrete he must before thinking out any particular subject have a sufficient knowledge upon which to base his thoughts. Those who desire to succeed will first try the method, following closely the instructions given by those who have pursued it with success, and will then—having succeeded—endeavour if they think it possible to simplify the method by such plans as may suggest themselves; and after putting their ideas into practice and finding them an improvement will no doubt be kind enough to give to those who have less of the experimentalist about them the result of their trials and the means by which those results have been achieved.

To introduce a queen by the direct method the following points need attention:—

1, Removal of old queen.

2, Confinement of new queen alone and without food for thirty minutes previous to introduction.

3, Keeping the queen warm during such confinement.

4, Not introducing her till dark.

There is no special time for depriving the stock of the queen which it is desired to supersede. It may be done at any time during the day upon which the new queen is to be introduced. The operation should be performed with as little disturbance as possible, and the stock must be allowed to become quiet again as soon as possible. The confinement of the queen for thirty minutes, keeping her during that time alone and without food, seems essential to success. Whether by such confinement the queen loses her peculiar scent, or becoming more quiet is less excited when allowed to run into the stock, or by abstinence from food becomes more agile and moves about the combs more freely, and therefore apparently with greater confidence, seems hardly decided, but that in some way this solitary confinement does exercise an influence either upon her conduct when introduced to the stock or upon the conduct of the bees when she is introduced to them there can be but little doubt. During this period of restraint the queen must be kept warm. This point needs no explanation, for it is self-evident, knowing what we do about queens, that a chill contracted just prior to introducing her to a strange stock would be in every way detrimental to her, and probably cause the bees to reject her; and even if they received her amicably she would herself have sustained an injury from which she would in all probability never wholly recover. The fertility of the queen is, I believe, often reduced by chills suffered during the winter months. This seems to be especially the case when stocks are weak. In no other way can certain failures in queens be accounted for. The queen must not be introduced until dark, and then the introduction must be done as quietly and with as little disturbance as possible.

Mr. S. Simmins in his "Original Non-Swarming System," gives a very succinct and good chapter on this subject, from which a few quotations shall be made. "Upon receipt of a queen, go to the hive and remove that one to be superseded (or otherwise). At dusk take the new queen quite alone. After keeping her so for not less than thirty minutes previously, but quite warm, and moreover without food meanwhile, lift quilt at one corner, drive bees back with very little smoke, and then permit the queen to run down. Close the hive, and make no examination until after forty-eight hours. Leave the operation until so late that a lamp is necessary." He adds, "It matters not as with the original method whether the old queen has been only just removed or if the hive has been long queenless, the new queen will always be accepted." Every bee-keeper may give this system of introduction a trial, and from my own experience such a trial will—if strict adherence is given to the instructions—end in success.—FELIX.

TO CORRESPONDENTS

*** All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Books (*J. P.*).—If you mean Sweet's "Hortus Britannicus," it can only be obtained from second-hand booksellers, but may be occasionally met with for a few shillings. Johnson's "Cottage Gardener's Dictionary" will be much more useful to you at the present time. It can be obtained from this office, price 7s. 6d., post free 8s.

Furnace not Heating (*Subscriber*).—Your letter will be fully answered next week.

Kew and Chiswick Gardens (*J. G.*).—The young men employed in these Gardens as students are required to have had several years previous experience in gardens or nurseries and to be of good character. Particulars can be obtained on application to the Curator of the Royal Gardens, Kew, or to Mr. A. F. Barron, Royal Horticultural Society's Gardens, Chiswick.

Fuel (*Inquisitive*).—We do not quite understand to what you allude under the name of "burgy," but many persons who have tried different kinds of fuel find a mixture of small coke and coal, the latter being known as slack and breeze in different localities, as economical and profitable as any for the different forms of saddle boilers. We have found no fuel give more heat for the same outlay than the mixture indicated, and you may safely try it for your boiler.

Horticultural Society (*Old Subscriber*).—It is impossible for us to form an opinion of a Society which has been brought before you as "limited, and shares so much each," without seeing a prospectus. We are pleased to observe your desire to "help gardeners," but trade societies are usually formed to benefit the shareholders. There are benefit and provident societies that are real helps to gardeners, their widows and orphans, and all or any of these are glad to receive subscriptions to the funds from persons able and willing to contribute.

Celery—Naming Exhibits (*J. R. W.*).—We are not able to give the address of Mr. Wright "the raiser of several specimens of Salary;" but possibly some of our readers can identify the raiser of the varieties of Celery to which the name mentioned is attached. Specimens at shows should be named, and care exercised in spelling the names correctly; as to the alternative of marking the specimens "unknown" where the condition is published in schedules it should be enforced, and if not enforced discarded as a useless redundancy.

Red Spider on Vine Rods (*A Learner*).—The buds as well as the rods and canes, in fact every part of the Vines, may be dressed, and the mixture being used with care and judgment will not injure the buds provided they are quite dormant. Winter dressings will not render the Vines proof against red spider. The pest must be prevented by painstaking culture, and prompt remedial measures must be taken whenever it appears.

Eucharis not Flowering (*Idem*).—It is a mistake to rest the plants by keeping them in a dry and too low temperature, as it has a weakening tendency. We find the best results follow from encouraging the plants to make and complete a good growth and still continue them in the same temperature but with lessened supplies of water, yet to prevent much limpness of the foliage. Under this treatment the plants flower successionally throughout the year. The only precaution necessary is to keep an eye on them, and when they commence throwing up their foliage and flower scapes to apply water freely and feed liberally, continuing this until the growth is perfected.

Tennis Lawn Mossy (*W. H. A.*).—Lime will destroy moss, but we should use it along with wood ashes, the lime freshly slaked and the wood ashes dry. Half a bushel per rod will be sufficient, or a peck of each. It should be distributed evenly, and before applying it would be advisable to scratch the ground well with an iron rake, clearing off the moss disturbed. It may be done from now to March in mild weather,

the earlier the better. If you require a better growth of grass, apply a dressing of decayed manure or compost a short time after using the lime and wood ashes, or apply soot during moist weather when the grass begins to grow. A peck per rod is a sufficient dressing.

Nitrate of Soda and Sulphate of Ammonia (*North Herts*).—As a rule the former is somewhat quicker in its action, the latter a little more lasting in effect, but the results are not uniform in all seasons, and on differing crops and soil. Speaking broadly, nitrate of soda is the more effective in dry soils and seasons, sulphate of ammonia in cold soils and in wet seasons. It is impossible to indicate the quantity best to apply, as this must be determined by the fertility of the soil and the condition of the crops. An ounce of either sprinkled on a square yard of ground and hoed in, also watered in dry weather, would be a good dressing, and better results might be expected to follow with twice the quantity of superphosphate of lime added to your Roses and Strawberries. You cannot make a mistake by trying both the nitrogenous manures, as they will stimulate growth, and you may then find which is the better for your soil and purpose.

Yellow Picotees (*T. Wood*).—They are certainly not a "new race." We have known them for thirty years at least, and remember some seedlings raised by Mr. Richard Smith of Witney that caused somewhat of a sensation at the time. In searching for a reference to these we find that after the death of Mr. Smith in 1860 his stock was placed in the hands of Mr. J. D. Hextall, who further alludes to the section as follows in "Gossip of the Garden," page 257, vol. vi. (1861). "My own acquaintance with the yellow Picotee extends as far back as 1824. I found a coloured plate of a bloom given in 'A Treatise on the Pink, Carnation,' &c., by Thos. Hogg, a high authority in those days. Its singularity attracted my attention, and I obtained a dozen varieties from Mr. Hogg as a trial; but in a wet season, and with plants of German origin from a climate warmer and drier than our own, and the stock not sufficiently acclimatised, it was no wonder I did not then succeed. A few years afterwards I procured some of the best English raised ones I could obtain, and have continued to grow them to the present time, adding from time to time the new ones sent out by Mr. May, Mr. Bragg, and others, but must confess they have fallen short of my wishes. It remained for a veteran amateur, by a dozen years of unwearied scientific hybridisation, to accomplish that which had been attempted with less success by professional growers. Mr. Smith's memory will for many years be perpetuated by his labours. There can be no doubt that the introduction of these seedlings, of such superior quality and stamina, will greatly tend to the future popularity of the class, and if persevered in as they deserve to be, and a fair proportion of encouragement given to them, that they will add a new and attractive feature to the future exhibitions of the National Carnation and Picotee Society."

Forcing House Arrangements (*Cambridge*).—It is not necessary to have the partition; indeed, it would be alike objectionable from a cultural and economic point of view. A propagating frame could be made to rest on the slates or covering over the hot-water pipes in the bed, and with cocoa refuse for plunging the cutting pots you will have all that is required for the successful propagation of most plants. It would be most desirable to have both sides the house arranged as shown on the east side in the plan, having the two 4-inch pipes for bottom heat forming a chamber by covering with slates, and with cocoa refuse the arrangement would be complete, as it would form a moist medium for standing pots upon, or for plunging such as it is deemed advisable to afford bottom heat. For so narrow a house side ventilation is not necessary, but it should be provided in the roof at the ridge. The side walls we should have reduced to 4½ inches, four courses of bricks from the top, which should—*i.e.*, the four courses of 4½ inch—be built in cement. This would form a ledge on which two rows of 4-inch pipes, a flow and return over each other, could be placed, and would give all the top heat necessary. The pipes on the roof are not necessary for the forcing house. The hot-water pipes for top heat will be quite right in the troughs, and adopting our plan you will only need a board the depth of the pipes to keep the plunging material away from them. A shelf over them might be useful for small plants, but it must not rest on them, being fully 6 inches from them, so that the heat may rise freely, in fact it would be better without it. A frame on the west side would be useful. It would be best heated with hot-water pipes. A 1½-inch or 2-inch flow and return would be ample for a frame 6 feet wide inside. We have heated them very successfully by fixing the piping beneath the bearing pieces or rafters, one pipe at the lower part and the other near the middle of the slope of the roof.

Fruit for Strong Soil (*New Subscriber*).—If you cannot make the clayey soil more open by additions of lime rubbish, sand, or gritty matter of any kind, you should collect a little of the freest soil you can find to place in actual contact with the roots, fresh roots not forming quickly in cold heavy land. If you could char or partially burn some of the soil, it would improve it considerably for fruit culture. Both orchard standard, and bush or pyramid trees would answer, and it is for yourself to choose which form you prefer. The latter take up the least space and bear the soonest, but eventually, and in the course of years, the former give the most fruit with the least trouble in pruning. You do not say whether you wish to grow dessert as well as culinary Apples; if you wish to do so, Irish Peach, Devonshire Quarrenden, and Cox's Orange Pippin are good; Duchess of Oldenburgh, Wormsley Pippin, and Blenheim Pippin are good for both dessert and cooking, the first being the best for bushes, the last for standards. Stirling Castle, Small's Admirable, and Lane's Prince Albert are good for bush trees. Of Pears Williams' Bon Chrêtien, Beurré d'Amanlis, Louise Bonne of Jersey, Fondante d'Automne. Doyenné du Comice and Bergamotte Esperen are good growers and bearers of excellent fruit. Denyer's Victoria is one of the most profitable Plums, but if you want a variety for succession Rivers' Royal Prolific, The Czar, White Magnum Bonum, Victoria, Pond's Seedling and Grand Duke will be useful. You do not state your wants very precisely, so we give the best reply we can under the circumstances. The sooner you plant the trees the better, but the soil must be in a dry and friable condition, not wet and adhesive when the work is done. Spread the roots out straight, cutting off any broken ends and cover with crumbled soil 4 or 5 inches deep, and if when all is finished the trees are on mounds 3 or 4 inches above the general level of the ground they will be better than if planted level in your cold heavy soil. Stake to prevent their being blown about, and if convenient spread a layer of 3 inches of littery manure on the soil over the roots and a foot beyond their extension. The trees should be pruned soon after they are planted, shortening the wood made last year to half its length, more or less, due regard being paid to the symmetry of the trees, also thin out any misplaced or overcrowded growths altogether, following in regard to the disposition of the branches the routine described on page 37 last week.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*P. H. Wright*).—1, Walsgrove Wonder; 2, Lady Henniker; 3, Grecnup's Pippin.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*A. B. C.*).—Cupressus sempervirens stricta. (*Surrey Gardener*).—Yes, your plant is the true Freesia refracta alba. F. Leichtlini is not so pure, being of a creamy yellow tint. The Epaeris is miniata splendens. (*W. R. S.*).—1, Kennedya Marryattæ; 2, Cypripedium insigne Maulei; 3, Lælia albida. (*P. A.*).—1, Libonia floribunda; 2, Peristrophe speciosa; 3, Acacia platyptera; 4, Erica melanthera.

COVENT GARDEN MARKET.—January 25th.

Market still very quiet with supplies falling off.

VEGETABLES.

	s.	d.		s.	d.		s.	d.		s.	d.
Artichokes, dozen	1	0	to	2	0	Lettuce, dozen	0	9	to	1	3
Asparagus, bundle	0	0		0	0	Mushrooms, punnet	0	6		1	0
Beans, Kidney, per lb.	1	0		0	0	Mustard and Cress, punt.	0	2		0	0
Beet, Red, dozen	1	0		2	0	Onions, bunch	0	3		0	0
Broccoli, bundle	0	0		0	0	Parsley, dozen bunches	2	0		3	0
Brussels Sprouts, ½ sieve	3	6		4	0	Parsnips, dozen	1	0		0	0
Cabbage, dozen	1	6		0	0	Potatoes, per cwt.	4	0		5	0
Capsicums, per 100	1	6		2	0	,, Kidney, per cwt.	4	0		0	0
Carrots, bunch	0	4		0	0	Rhubarb, bundle	0	2		0	0
Cauliflowers, dozen	3	0		4	0	Salsafy, bundle	1	0		1	6
Celery, bundle	1	6		2	0	Scorzonera, bundle	1	6		0	0
Coleworts, doz. bunches	2	0		4	0	Seakale, basket	1	0		1	3
Cucumbers, each	0	6		1	3	Shallots, per lb.	0	3		0	0
Endive, dozen	1	0		2	0	Spinach, bushel	1	6		2	0
Herbs, bunch	0	2		0	0	Tomatoes, per lb.	0	6		1	0
Leeks, bunch	0	3		0	4	Turnips, bunch	0	4		0	6

FRUIT.

	s.	d.		s.	d.		s.	d.		s.	d.
Apples, ½ sieve	1	6	to	3	6	Oranges, per 100	2	0	to	5	0
Nova Scotia and Canada barrel	10	0		18	0	Pears, dozen	3	0		6	0
Oobs, 100 lbs.	55	0		0	0	Pine Apples, English, per lb.	0	0		0	0
Grapes, per lb.	2	0		3	6	St. Michael Pines, each	3	0		5	0
Lemons, case	10	0		15	0						

CUT FLOWERS.

	s.	d.		s.	d.		s.	d.		s.	d.
Abutilons, 12 bunches	3	0	to	6	0	Lilies, White, 12 bunches	0	0	to	0	0
Anemones (French), 12 bunches	3	0		4	0	,, Orange, 12 bunches	0	0		0	0
Arum Lilies, 12 blooms	5	0		8	0	Lily of the Valley, 12 sprays	0	9		1	6
Asters, 12 bunches	0	0		0	0	Mignonette, 12 bunches	3	0		6	0
Azalea, 12 sprays	0	8		1	0	Narciss, white (French) 12 bunches	3	0		9	0
Bouvardias, bunch	0	6		1	0	Pelargoniums, 12 trusses	1	0		1	6
Camellias, 12 blooms	3	0		4	0	,, scarlet, 12 trusses	0	6		0	9
Carnations, 12 blooms	1	0		3	0	Poinsettia, 12 blooms	4	0		8	0
Christmas Roses or Hellebore, 12 blooms	0	6		2	0	Primula (single), bunch	0	6		0	0
Chrysanthemums, 12 bchs.	15	0		24	0	,, (double), bunch	0	9		1	6
,, 12 blooms	2	0		4	0	Polyanthus, 12 bunches	0	0		0	0
Cyclamen, 12 blooms	0	6		1	0	Ranunculus, 12 bunches	0	0		0	0
Daisies, 12 bunches	2	0		4	0	Roses, Red, 12 blooms	12	0		18	0
Epiphyllum, 12 blooms	0	6		0	9	,, (indoor), dozen	3	0		4	0
Encharis, dozen	4	0		6	0	,, Tea, dozen	1	6		6	0
Gardenias, 12 blooms	18	0		30	0	,, red, dozen (French)	1	6		3	0
Hyacinths, Roman, 12 sprays	0	6		1	0	,, yellow	4	0		9	0
Iris, 12 bunches	0	0		0	0	Stephanotis, 12 sprays	0	0		0	0
Lapageria, white, 12 blooms	2	0		3	0	Tropæolum, 12 bunches	2	0		3	0
Lapageria, coloured, 12 blooms	1	0		1	6	Tuberoses, 12 blooms	1	0		1	6
Lilium longiflorum, 12 blooms	6	0		9	0	Tulips, dozen blooms	0	9		1	6
Marguerites, 12 bunches	2	0		6	0	Violets, 12 bunches	1	0		1	6
						,, (French), bunch	1	9		2	3
						,, (Parme), bunch	5	0		7	0
						White Lilac, per bunch	6	0		7	0

PLANTS IN POTS.

	s.	d.		s.	d.
Aralia Sieboldi, dozen ..	6	0	to	12	0
Arbor vitæ (golden) dozen	6	0		9	0
„ (common), dozen..	0	0		0	0
Azalea, dozen	24	0		42	0
Begonias, dozen	0	0		0	0
Chrysanthemums, dozen	0	0		0	0
Cineraria, dozen	10	0		12	0
Cyclamen, dozen	12	0		24	0
Dracæna terminalis, doz.	30	0		60	0
„ viridis, dozen..	12	0		24	0
Epiphyllum, dozen	10	0		18	0
Erica, various, dozen ..	9	0		18	0
Euonymus, in var., dozen	6	0		18	0
Evergreens, in var., dozen	6	0		24	0
Ferns, in variety, dozen	4	0		18	0
Ficus elastica, each ..	1	6		7	0
Foliage Plants, var., each	2	0		10	0

	s.	d.		s.	d.
Fuchsia, dozen..	0	0	to	0	0
Hyacinths, dozen	6	0		12	0
„ (Roman), doz.	9	0		10	0
Hydrangea, dozen	0	0		0	0
Lilies Valley, dozen ..	18	0		24	0
Lilium lancifolium, doz.	0	0		0	0
Marguerite Daisy, dozen	9	0		12	0
Mignonette, dozen	0	0		0	0
Musk, dozen	0	0		0	0
Myrtles, dozen..	6	0		12	0
Palms, in var., each ..	2	6		21	0
Pelargoniums, dozen ..	0	0		0	0
„ scarlet, doz.	8	0		12	0
Poinsettia, dozen	12	0		15	0
Solanum, dozen	9	0		12	0
Tulips, dozen pots	6	0		9	0



LAMBING TIME.

No flock of ewes, however carefully they may have been selected, can pass through the lambing time without some risk of—we may say some loss. A flock of young ewes will sustain few losses, but yet there will, even in such a flock, be a few delicate animals, and some will prove troublesome—some die. It is obvious, therefore, that all possible precaution should be taken beforehand to prevent such losses, and much may undoubtedly be done to that desirable end.

We have devoted our first two papers chiefly to remarks upon the dietary of pregnant ewes, just because experience has shown that careful feeding has very much to do with successful lambing. Shepherds will assume a profound air, and assure one that a certain daily quantity of roots before lambing are essential for the ewes' safety. The aim of most shepherds is to induce one to regard their calling in the light of a "mystery;" but we long ago resolved to ascertain what were the requirements of sheep and how best to treat them both at lambing time and at other seasons of the year. We thoroughly recommend young farmers especially to take a flock in hand for a year or two themselves, and learn thoroughly the management of ewes, lambs, hoggets, and crones. Once acquired, such knowledge will prove invaluable for life, and we hold that no farmer is really competent to control shepherds till he has practically become a shepherd himself. Acting upon this conviction we insisted upon our own boys helping with all details of flock work when they became our assistants, with the result that one of them has already made his way to the honourable position of assistant agent in the management of two large estates, and depend upon it he will eventually be all the better manager for having held the plough and helped care for the sheep.

Our work of preparation for the lambing consisted of having a warm snug fold made with hurdle set in a double line wide enough apart to admit of plenty of straw put in closely between them. In addition to this outer enclosure there are numerous cribs around the inside of it, formed of thatched hurdles at the sides and for the roof. There are also divisions of thatched hurdles intersecting the interior, so as to break the force of the cold winds and to render the entire fold as snug as possible. Close by the fold is the shepherd's portable hut on wheels with a rude couch and fireplace inside it. Such shelter we consider essential, and we certainly have no sympathy with those flockmasters who provide no shepherd's hut because they think he may get inside and neglect the sheep. We know it for a fact that this harsh treatment is enforced by more than one owner of large ewe flocks, and we know also that they are wrong. To insist upon a shepherd being out with his flock through the long nights at this season of the year without reasonable provision for his comfort is absolute cruelty, and we should say it would lead to negligence rather than the exercise of vigilance. We do not make much provision of drugs and nostrums for the ewes. A few packets of Epsom salts, a bottle of castor oil, a large bottle of Calvert's carbolic oil and a syringe, some ergot of Rye, sweet spirits of nitre, and some brandy are all we require.

WORK ON THE HOME FARM.

We have certainly been highly favoured with fine weather for bringing up arrears of work upon the land this winter, and up to the time of writing this note have been able to keep the ploughs going notwithstanding that we have had some sharp frosts. Most anxious have we been to do all we could before snow locks up the land and prevents such work from being done, for our work of bringing poor farms into good order is an arduous undertaking in which we have to make every stroke tell. Withal it is most interesting work to watch the change from poverty of condition and lean crops to fertility, plenty, a bountiful yield, and a profit upon our labour. We do not speak rashly in this matter, for year after year we have farms falling in under the agricultural depression, and we have to take farm after farm from the incompetent hands of bankrupt farmers, and to render them really fertile, clean, and profitable to the owner of the land.

In this work we should like to proceed with deliberation, to drain, clean, and manure in due sequence of order, but the imperative necessity which exists to get something out of the land even during the first year compels us to make the best of things and to drain and manure for as speedy a return as may be. Faulty practice is it we know to crop land that is foul with perennial weeds. Well, we will have the drills wide apart to give free scope for the use of horse and hand hoes, but we will apply an extra dose of manure to enable the land to bear its double burden of corn and weeds, and once we get the corn off next harvest up comes the land to be got as clean as possible in autumn.

We are already at work upon our scheme of manuring for the year, for we have to give much thought to this work, and to thoroughly digest the whole matter beforehand in order to ensure the timely and correct use of the manures upon each farm. Our root crops will this year be materially reduced, for the cultivation of such crops is an expensive affair, and we only need them for sheep, as we have practically given up keeping bullocks for making farmyard manure.

OUR LETTER BOX.

Intercropping on Fruit Farm (*Tour Tower*).—Your new farm is a veritable Kentish fruit plantation, and we warn you not to exhaust the generous soil by trying to get too much out of it. Bush fruits at 6 feet apart will soon require the whole of the space, and the spreading roots must not be destroyed or broken at all, and therefore as you find them making way through the soil it must be left altogether undisturbed, and not broken up by ploughing or digging. For the first two years while the bushes are small you might have two rows of Beans down the centre of each 6-foot alley, grinding the Beans and cutting the stalks into chaff for horse food. In the 24-feet alleys your plan of growing Tares is a good one, provided you keep them full 5 feet from the fruit trees. Eventually you will find it answer best to fill the entire space with bush fruits or Strawberries, and to purchase food for the horses. You require no seed drill for so small a farm. Any handy man can sow you Tare seed broadcast, but you must have a small harrow to cover it with. We are intimately acquainted with your soil, and you may like to know that under good cultivation some years ago Black Currants in your locality yielded a crop of 16 quarts per bush. We mention this in order to show you that fruit-growing should be your chief aim.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				
1888. January.	Barometer at 32° and Sea Level.	Hygrometer. Dry.	Hygrometer. Wet.	Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature. Max.	Shade Temperature. Min.	Radiation Temperature In sun.	Radiation Temperature On grass	Rain
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 15	30.506	34.4	32.4	N.E.	38.0	35.2	31.1	29.8	27.0	—
Monday..... 16	30.460	32.7	32.7	E.	37.3	34.1	31.3	36.3	29.2	—
Tuesday 17	30.547	33.4	31.6	E.	36.9	35.4	32.2	40.2	27.0	—
Wednesday.. 18	30.588	32.6	31.8	N.E.	36.4	36.1	27.8	39.7	23.2	—
Thursday 19	30.658	35.8	34.0	S.E.	36.1	36.4	32.1	36.6	30.4	—
Friday 20	30.520	31.2	30.8	E.	36.2	45.7	29.8	48.4	25.2	0.118
Saturday 21	30.124	45.2	45.2	S.W.	36.6	49.9	30.6	51.4	25.6	0.180
	30.486	35.0	34.1		36.8	39.0	30.8	41.8	26.8	0.298

REMARKS.

15th.—Fine, but gusty, and rather bleak.
16th.—Overcast all day.
17th.—Cloudy morning, fair afternoon, bright evening and night.
18th.—Cloudy all day.
19th.—Dull with high fog.
20th.—Fine and bright, but with slight fog.
21st.—Very wet morning, damp all day with no sun; moonlight after 11 P.M.
A cloudy and somewhat dull week, generally dry, and practically free from fog. Temperature about 3° below the average, and nearly 4° below that of the preceding week.—G. J. SYMONS.

FLORAL DECORATIONS.

DISCUSSIONS on horticultural topics can be rendered very profitable to readers as well as the disputants when the sole object is the elucidation of some difficult point, and the desire of those engaged in it is not to prove themselves right and others wrong, but to find the truth. Within such limits there is ample room for the courteous expression of different opinions, and much good often results from a consideration of a matter from opposite standpoints. During the past few weeks floral decorations at exhibitions have been discussed by several correspondents in this Journal, and, as announced last week, advantage has already been taken of it in the framing of schedules for the current year. The Richmond Horticultural Society (Surrey) has set an excellent example in this respect, and it is reported that the enterprising Honorary Secretary (Mr. J. H. Ford), supported by a thoroughly practical Committee, contemplate some other alterations in their arrangements for the present year that are likely to still further increase their popularity.

There can be no question that, in fairness to all exhibitors, schedules cannot be too clearly worded, and, as regards the size of bouquets, much latitude has been allowed to competitors, with the result that there has seemed to be a general struggle which should show the largest, and the real objects of such classes have been lost sight of. Why the enormous bouquets sometimes seen at exhibitions and in florists' shops find admirers or purchasers it is difficult to understand, but it is probably in the same way that large fruit and vegetables find favour with some. A bouquet of medium size can be rendered as tasteful a combination of flowers as the most exacting could wish to see, and what advantage is gained by using twice the number of flowers? Too often the only results are an increased cost, and a huge production that is almost fatiguing to look at. Some of the finest bouquets of many hundreds that have come under my notice were not the most elaborate, in which the striving for effect was apparent; but those, composed with a kind of careless grace, good flowers only being used, and these with judgment, so that while their individual characters were not lost they were not sufficiently prominent to mar the general effect.

The separation of gardeners' and amateurs' classes from those devoted to the trade florists is a step in the right direction where sufficient competitors can be obtained to make an adequate display. It is correctly said, however, that gardeners can learn much from professional florists, and this they no doubt have done. Perhaps, however, they can learn just as well without having to be constantly contented with second and third prizes, as they are usually placed at a great disadvantage when competing with a trade grower having an almost unlimited command of choice flowers. Florists, like other human beings, are fallible, and they sometimes make mistakes that gardeners need not wish to follow. For example, in one of the leading florist's shops in Covent Garden market recently there was displayed a very elaborate bouquet of white Camellias, Eucharises, Christmas Roses, Roman Hyacinths, with graceful spikes of Lilies of the Valley freely and well arranged; in fact all that could be desired, except in one particular, which, to my taste, effectually spoiled it—namely, four large sprays of *artificial* white Lilac were inserted. Whatever could have prompted such a positively hideous production cannot be imagined, and happily such instances are rare, though florists may find some excuse for eccentricities in the variable tastes or peculiarities of their customers. Still the combination of artificial with real flowers in such a way is painful, and it would be as appropriate and agreeable to have a few wax models stationed in an assemblage of young and beautiful women.

Wreaths and crosses are now greatly in demand, and some of the trade florists derive a good portion of their business from the production of them. The spathes of Richardia æthiopica are extensively employed for this purpose, but they are often too numerous, and impart a heavy effect that is very undesirable. For decorative purposes generally they are very useful, either cut or on the plants, especially where large spaces have to be filled, but they might be frequently dispensed with altogether in wreaths. There are plenty of white flowers to select from that are much better fitted for the purpose, and the peculiar heavy white of the Richardia spathes contrasts unpleasantly with the purity of the old double white Camellia japonica, the Christmas Roses, and Lilies of the Valley.

Sprays of flowers for ladies, and buttonhole bouquets for gentlemen, are usually the most satisfactory at exhibitions and in the florists' shops, because they are marked by the greatest simplicity. Very few flowers are employed, and consequently more care has to be exercised in their selection or combination. In the case of ladies' wreaths there has been a tendency to increase the size unduly, but even in those the flowers require to be used with care.—C.

THE CULTURE OF HARDY FRUITS.

The Apple, I consider, may fairly claim the first place amongst our hardy fruits. Being indigenous to this country it can be cultivated with considerable success, and no other kind of fruit tree affords so lasting, and so generally useful, a supply of fruit, for with a suitable selection of varieties a supply may be had the whole year round. Its usefulness for culinary, dessert, confectionery, and cider-making purposes is too well known to need comment. A suitable selection of varieties is of vast importance, as some well-known varieties succeed in certain localities much better than others, therefore it is an advantage to be well acquainted with the varieties that are found to succeed best in the neighbourhood. It is also necessary to bear in mind the kind of trees taken in hand, and the purpose for which they are required, and the kind of stock they are worked upon. For small gardens, where space is limited, and numbers of different varieties are required, it is necessary that the trees must be of small stature; therefore trees worked upon dwarfing stocks are preferable, otherwise much labour has to be spent upon them in root and branch pruning to keep them within the limited space allotted to them. In many instances, too, much is expected to be produced from a given space of ground. It is not uncommon to find fruit trees surrounded with crops of vegetables close up to their stem, drawing away the food which should go to support the trees, and necessitating stirring the soil far too deeply for the full benefit of the trees, and is the cause of depriving them of their most important roots. I can fancy what a first-class Grape-grower would say to anyone recommending digging, a spade deep, the surface of a Vine border, and yet how frequently do we find the ground immediately around the roots of hardy trees dug the full depth of a spade, and then it is wondered that trees do not bear satisfactorily, and that they grow so strongly. The cause in their unsatisfactory condition in this respect is not far to seek, for with the annual cutting off of their most important roots (those just below the surface of the ground) they are left to derive their supply of food from thick roots placed deep down away from the immediate influence of the warmth of the air, thereby causing them to produce a superabundance of gross unripened wood, which usually proves unfruitful, ultimately cankers, and is one of the causes of branches dying back.

When trees are planted sufficient room must be allotted to them

for their future growth, both root and branch, and they should be so placed that the soil once properly prepared for their reception by deeply working it (and if an old garden, a good portion of maiden soil may be placed round the roots of the trees when planted), after which no further disturbance of the soil will be needed beyond lightly pointing over the surface, or hoeing to keep down weeds. When planting is being done, the soil, if in a suitable condition, should be made very firm about the roots, which is conducive to sturdy growth. Give a mulching of rather long manure over the roots, and renew this annually, but when the trees get into a bearing state the mulching should be of a more stimulating nature—that is, if the trees do not grow quite so strongly as desirable.

Pruning must be regulated by the strength of the trees. If strong shoots are cut hard back they will only grow the stronger the following season; if only slightly shortened they will form fruit buds two-thirds the length of the shoots, and when once they are in good fruiting condition the growths may be shortened more freely without fear of their becoming too strong. Allow full space for the branches, so that the sun has access to the centre of the trees to colour and flavour the fruit. The bush form of tree appears the most natural for the Apple, and, in my opinion, the most profitable; and if they can have a portion of ground allotted for their entire use it is very much better than dotting them about all over a garden, where they very much interfere with the rotation of crops and the cultivation of the ground. In large gardens the borders at each side of the principal walks are generally devoted to fruit trees, and then sufficient space is left for vegetables without interfering with the trees. But even in the case of large gardens one frequently sees fruit borders occupied with herbaceous plants as well; but it is not at all times the fault of the gardener for cropping the ground at which shou'd be occupied by the roots of the trees. I lived with a lady once who used to look upon the outside borders of the vineries, which were occupied with Vine roots, as a waste piece of ground, and, notwithstanding an explanation of the evil result, insisted upon having the borders filled with herbaceous plants, and yet at the same time first-class Grapes were expected. I am here going a little astray as regards hardy fruit, but only to illustrate what are some requirements.

The Pear is scarcely less useful than the Apple, for, with a suitable selection of varieties, they can be had over a considerable portion of the year, and the treatment of the one is to a great extent applicable to the other; but in some instances the protection of a wall is almost indispensable in the colder districts for some varieties of Pears to enable them to attain the highest perfection, and it is preferable to have a limited number of well-known reliable sorts to form a good succession than to have a vast variety of sorts which ripen simultaneously and are inferior in flavour. Severe pruning in a young stage should be avoided, for in allowing more extension than is sometimes adopted the trees come into bearing more quickly and fill the space allotted to them in much less time than when they are cut back hard. Ample space for the branches must be allowed, whether standards, pyramids, espaliers, or trained to walls in the various modes. Care is necessary and judgment is required in gathering the fruit; if gathered too soon they invariably shrivel, the late varieties requiring a long season to mature, so should be allowed to remain on the trees as long as possible. On walls the fruits in good season generally set very thickly, and it is advisable to thin the fruits considerably, or the strength of the trees is so taxed that they cannot bring the crop to perfection.—W. Simpson, *Knowsley*.

(To be continued.)

GARDEN SPECIALTIES.

There are perhaps but few gardens, whether they are under the care of the professional or the amateur gardener, where there are not among their numerous occupants specialties in some form or variety; and indeed a garden would be considered of little interest if it contained no cherished favourites that would be deemed worthy of some extra cultural attention. Orchids form a specialty with some, while Grapes find many enthusiasts; the outdoor flower gardener selecting perhaps Roses, hardy herbaceous plants, &c.; the fruit grower devoting his extra attention to Apples, Strawberries, or Peaches. There is abundant scope in any branch of gardening for the exercise of individual tastes, and this is almost or quite as marked among cottagers as it is with professional gardeners.

In this, as in most districts, each garden seems to have provided some object that claims attention in a more or less marked degree, those of Park House, Kingsclere, the residence of J. Porter, Esq., claiming premier honours in point of specialty. In this garden Orchids are being made the prominent feature, and although it is not as yet in possession of a representative collection, still it is on a fair way towards attaining that end. At present there are no Orchid houses proper, the plants requiring warm treatment being grown in mixed stoves or forcing houses, while the cooler Odontoglossums, Masdevallias, &c., occupy positions in cool houses or pits. It is intended shortly, however, to erect some houses for the convenience of these choice exotics, then additions will be made both in point of numbers and variety. Mr. Porter is a great admirer of this class of plant, and spares no expense in extending his already interesting collection.

At the time of my visit there was a fairly good show of Orchid bloom, and a promise of a richer display later on, there being numerous spikes of flowers advancing among the various species grown. Some plants of the popular Lælia anceps were carrying several spikes of their richly coloured blossoms. L. autumnalis was almost past, but had been very showy and useful. Very noticeable was the almost pearly white L. albida, this being greatly valued as a buttonhole flower on account of its delicate primrose scent. Calanthes have also proved useful, and afforded abundant material for cutting purposes. Of Oncidium crispum there was an extra fine variety. The same remark also applies to Odontoglossum crispum, a small plant being furnished with flowers of a very superior form. There is a good number of this valuable cool Orchid, and their flowering is looked forward to with great interest. They being obtained from several trade sources are expected to furnish some distinct forms, those already in flower being very dissimilar. O. Rossi majus has been in perfection for three months, and is still fresh. Oncidium ornithorhyncum also forms an interesting and pretty spike.

Cypripediums in flower are represented by the old and indispensable C. insigne, some of these having been expanded since early in November. C. Boxalli is another favourite, this being remarkable for its apparently highly polished surface. Among other Cypripediums noticed, some of which were in flower, others in bud, were the choice C. Spicerianum, C. Lawrencianum, C. Harrisianum, and C. Stonei. Mr. Norris, the gardener, has been very successful with Dendrobiums, many of the varieties having made excellent growths, and are promising a rich display. Space will not allow of the mention of many, but such as D. Wardianum, D. primulinum giganteum, D. Devonianum, D. Dalhousianum, D. thyrsiflorum, and D. crassinode Barberianum might be named among many others of perhaps equal merit. In addition to those already enumerated there are numbers of others, the whole of which are in capital health, under the same atmospheric conditions provided for other plants.

In another house there are some good Tree Carnations in variety, these, too, being highly valued, and are in good demand for buttonhole purposes, several of Mr. Turner's latest introductions from the Slough nurseries being among the collection, the best of which includes Col. Cox, Countess Howe, Coronet, and Madeline. Of older sorts mention might be made of the following—Andalusia, primrose, bright; Phœbus, scarlet; Brunette, maroon; La Belle, white; Whipper-in, scarlet, with darker stripes; and Incomparable, buff, scarlet edges, very fine, these all being sorts of the very best quality. Border Carnations and Picotees are grown in goodly numbers both in variety and quantity, these two sections providing flowers the whole year without any break in the supply.

Roses, too, are treated in much the same liberal manner, all the best and most popular varieties being represented, the H.P. section predominating. These receive liberal treatment, and are grown in a specially prepared border, and during the Rose season large quantities of blooms are gathered almost daily, many of them being of exhibition quality. These, together with the Orchids and Carnations, form a trio of choice plants worthy of being made a specialty, and although they are in a measure expensive in the first instance, yet they give a good return for the outlay in obtaining and providing for them.

Although I have thought to mention these three distinct classes of plants only as specialties, it does not by any means exhaust the list of other plants grown in varying numbers. In the stoves may

be seen a very good assortment of material grown to supply choice table and other plants, while Violets, and the usual florist flowers, such as Cinerarias, Primulas, Calceolarias, Gloxinias, &c., are each represented in fairly good quantities. Chrysanthemums number about 300, these being grown to supply large blooms principally, but due provision is made with regard to flowers for cutting, as there is a good demand at all seasons.—W. S., *Kingsclere.*

THE CULTIVATION OF ZINNIAS AND OTHER ANNUALS.

Procure seed of double Zinnias from a reliable house, sow it at the right time, and give the plants about half the attention required to prepare Zonal Pelargoniums for bedding ; plant them in a well prepared bed by themselves, and they will repay the cultivator with a rich and continuous harvest of bloom, by the side of which Pelargoniums will be tame and carpet bedding flat. Not only so, he will be able to "cut and come again," for few flowers last so well when cut as Zinnias, as if arranged so as to take off their rather stiff formality they are very effective for dressing flower stands.

At first sight it seems surprising that plants of this nature are not more largely grown, but is it not a fact that many beautiful easily grown plants and flowers have often to give place to those which are much more difficult and expensive to grow, but which, in many cases, are far less effective and profitable ? The reason is not far to seek, for it is often because they are easily managed that they are left to themselves until what should have been a grand display becomes an eyesore, such as a Zinnia, for instance, with a small solitary flower on the top a thin nearly leafless stem, which requires a stake to prevent it falling.

We have every phase of bedding here—carpet, sub-tropical, succulent, ribbon borders, mixed beds, &c., but although all of it did well last season none was so much admired as a bed of Zinnias ; indeed, although they were far less trouble and expense to prepare we had nothing to equal them neither for use or beauty. The seed was sown on a slight hotbed April 11th, the plants were pricked off into a cold frame May 12th, and planted on a large circular bed 6 inches apart (they should have been 9 inches apart) June 9th, where from the first week in July they formed a rich mass containing many shades and colours of bloom.

For the guidance of beginners I will give more detailed instruction on the cultivation of Zinnias, which may be safely applied to many beautiful annuals. Those having frames or other means of protection should make a slight hotbed with leaves or well sweetened stable manure the first week in April. The frame may be placed on the bed as soon as made, and 6 inches of compost, consisting of equal parts loam, leaf mould, and sand, laid over the bed inside the frame, and should be well pressed down. Draw drills 3 inches apart and 1 inch deep, in which the seed should be thinly sown and covered with fine light soil sifted for the purpose. If each colour be kept separate and duly labelled it will be of great advantage, as then the colours can be more artistically arranged in their permanent quarters. The light should be kept closed until the seedlings appear through the soil, when on every favourable opportunity they must have a little air until they are in rough leaf, after which on warm days take the light off, the object being to produce strong stocky plants. Through April and May, however, we often have hot sunshine with a cold wind. On no account must the light come off on such occasions, but give a little ventilation, or if very rough and cold keep the frame closed. Plenty of air will get under the glass to prevent injury, but if the sun be very hot a slight shade will be better than admitting the cold wind. Set the frame on a hard base, put in 2 inches of leaves and 9 inches of the following compost—three parts loam, one part leaf mould, one part Mushroom bed refuse, and one part sand, thoroughly mixed and pressed down firmly. Carefully prick off the seedling plants into this frame 4 inches apart. Give a good watering with warm water through a rose can. Keep them close and shaded from sunshine for a few days, then give a little air, gradually increasing it until the light can be taken off through the day, which may be done in about fourteen days after pricking off. The last week in May the light should be left off day and night, always remembering what has been said about cold winds, for they sometimes pay us their unwelcome visits far into June.

The first or second week in June, according to the weather, the plants should be transferred to their flowering quarters, which to do them justice must be a well manured deeply dug bed, but of course plants prepared as above will make a grand display in mixed beds on borders if not too much smothered by other plants. Give the plants in the frame a good watering a few hours before taking them up ; they will then carry good clumps of earth, and may be transplanted without any check if carefully done. Plant them 9 inches apart, arrange the colours according to taste, and give a good watering to settle the soil round their roots ; the cultivator will then, in due time, be rewarded with a rich and continuous display of large flowers and a general effect such as is seldom produced by plants requiring a more troublesome and costly preparation. If 3 inches of cocoa-nut fibre or the sifted material of a spent Mushroom bed be laid over the soil it will keep the roots cool and moist, save much watering, and benefit the plants considerably.

Those not possessing means of protection may grow Zinnias by sowing the seed thinly in pots the last week in April, keeping them in a warm room with plenty of light, and when through the soil place them out in warm favourable weather, taking them in at night. Make a rough frame by nailing together four boards 18 inches wide ; two of the boards may be 6 feet long for the sides and two 4 feet long for the back and front of the frame, and then proceed with soil, &c., as already advised, but in the absence of lights to cover the frame nail a few strips across the top and cover with mats, bags, or anything to keep out the cold at night. With a little care equally good plants may be grown in this way, only they will not commence flowering so early by two or three weeks. The following annuals may be grown to perfection if treated according to the above directions, only being for the most part hardier they may be planted out earlier, and the smaller growing ones closer together :—Asters, Ten-week-Stocks, Helichrysums, Salpiglossis, Petunias, Phlox Drummondi, and Portulacas, all of which will richly reward the cultivator if liberally treated.—J. H. W.

EARLY PEAS—SOWING IN TRENCHES.

Early Peas are a consideration where a constant supply of vegetables is required all the year round. Some gardeners sow in the open ground in November for early use, others raise them in the spring under glass, and then plant them out in the open ground when the weather becomes favourable.

Peas raised under cover are often more forward than those sown in the autumn. They can be sown in pots, boxes, or turves. We generally procure a sufficient number of turves cut for the purpose about 12 inches long, 3 inches thick, and 6 inches wide, place them grass side down in a vinery, then make holes in them about 1 inch apart with a small dibble, sow the Peas, and cover them with fine soil. Mice should always be guarded against. When the Peas have made about 1 inch of growth the turves are removed to a cooler house or pit, placed as near to the glass as possible, afterwards admitting plenty of air when the weather permits.

In due time they are planted in shallow trenches which have been made ready to receive them, a little soil being drawn to both sides of the row, and the Peas staked at once. It is a good plan to stick in plenty of small branches in order to protect them from cold winds. Early varieties should be sown. American Wonder is good, being of compact growth.

Last summer will long be remembered as a very hot and dry one. Main crop Peas with us would have been a total failure if we had not sown in deep well manured trenches, as our soil is naturally dry. We form trenches about 1 foot deep, put in the bottom a good layer of manure, with a sprinkling of soil on the surface ; and after sowing the Peas cover them at least 3 inches deep with soil. In summer water is given to them without waste, the water going direct to the roots.

Our object in covering the Peas with so much soil is to prevent the sun drying the soil at the roots too soon. If after a few good waterings the rows are mulched with manure they will grow and yield a good crop, while others sown on the level ground are scorched. Stratagem Pea does not do well with me. I have tried it with plenty of manure and with a moderate quantity, in shallow trenches and deep ones, but the pods always appear stunted and prickly, somewhat like a ridge Cucumber. I do not know the cause of this. G. F. Wilson is a grand Pea for dry soils and seasons. It is also a good flavoured Pea. I intend to grow it more largely in future.—G. Garner, *Amberwood Gardens, Hants.*

WINTRY WEATHER.

Fickle though our climate is, the month that has just closed has perhaps exhibited more than the usual variations of temperature, the most marked feature of January being perhaps the dense fogs which prevailed for nearly a week. Very little snow fell, and on the whole there was little rain. Here and there during the month, and notably on Monday the 23rd, came a day of rare softness, when the air was besides full of sunshine. The thrush piped in early morning, and the larks in the open soared high and sang loudly. Between the 24th and the 25th strong winds swept from the north-west. The 27th was fine but cold. Towards afternoon the weather was unusually bright, when just at sundown, while a vast portion of the sky was perfectly unclouded, a great and sudden darkness

came on. It was a snowcloud sweeping swiftly out of the north. Daylight was in a moment gone, and one was almost bewildered by the unexpected obscurity. Not much snow has fallen, however, indeed the covering is all too scanty. Farmers and gardeners desire more moisture. Spring flowers are well to the surface. Here and there some Snowdrops, Winter Aconites, and the dead time is past. Every day one expects something to appear. The gardener's eye is always watchful ; the gardener's heart always hopeful.—A. M. B., *Mid Lincoln.*



CYPRIPEDIUM SAUNDERSIANUM.

The Cypripedium which was noted last week as having been purchased by Mr. W. Bull for £300 was inadvertently given as C. Sanderianum, but it should have been C. Saundersianum, a quite distinct and very remarkable hybrid. It is, however, so scarce and so little known that it deserves a speeial descriptive and historical note. I have been favoured with most of the particulars by Mr. R. H. Measures, Mr. F. G. Tautz, and Mr. W. Bull, who are, I understand, the only possessors of this Cypripedium in England.

It appears to have been raised about twenty years ago by Mr. Wm. Marshall, now of Auchinraith, Bexley, and recently elected on the Fruit Committee of the Royal Horticultural Society, but he was some years ago a member and Chairman of the Floral Committee. Nothing certain seems to be known respecting its parentage, but it is thought that C. Schlimi or C. Sedeni was one of its parents. In the leaf it resembles C. Sedeni, but it is not so free in growth or flowering as that, for though it has been cultivated so long flowers have been seldom produeed. According to the descriptions given by those who have seen the flowers it must be one of the most handsome yet obtained. The general colour is said to be a fine "mauve purple," the dorsal sepals white with green and purple stripes, the petals broad spotted with purple on a white ground.

Mr. Marshall's plant was purchased by Mr. W. Bull, and subsequently sold to Mr. W. Lee, of Leatherhead in the autumn of 1883 for £50 on the condition that when it could be divided a side break should be returned to him. A year or so afterwards this was done, a second break having then been produeed, which was obtained by Mr. Bull, the original break being purchased for £100. One of these went to enrich the valuable collection of Cypripediums in the possession of Mr. F. G. Tautz, Studley House, Hammersmith ; the other was secured by a firm in Ghent. The latter was shortly afterwards sold to M. Jules Hye of that city, who is well known as an admirer of the Cypripediums. He divided it, and one of the plants was obtained by Mr. R. H. Measures, The Woodlands, Streatham, in exchange for some of his choice plants. The original plant at Downside flowered in 1886, and was then described under the name C. Saundersianum in honour of the late Mr. Wilson Saunders. This is the plant transferred to Chelsea, and now divided into six pieces.

Mr. R. H. Measures, has kindly favoured me with the following note :—"Referring to our conversation at Protheroe's, *re* Cypripedium Saundersianum, I find it was actually raised by Mr. Marshall of Enfield, Middlesex. Its parents are Sehlimi and caudatum. From the habit of the plant I should think Sehlimi is the seed parent. The plant is what we call a difficult one to grow. I remember a conversation I had with Mr. Lee, and his telling me that it had bothered him considerably, until at last, finding an insect somewhat resembling a small beetle, he attributed to this the apparent blemishes in the leaves, thinking the insect fed on them. This could not have been so, as the plant afterwards (and at other places) showed the same defect of foliage. When Mr. Marshall's collection was sold the seedling went into the possession of the Royal Horticultural Society, and was at South Kensington some time between 1866 and 1869. When the Royal Horticultural Society's collection was sold the plant was lost sight of by me, but I believe it passed into the hands of Mr. Saunders, and was by him named 'Saundersianum' (but of the naming I am not sure). From Mr. Saunders I believe it went into Mr. Bull's nursery. There appears to be some confusion as to its being sold to Mr. Lee. I had it from Mr. Bull himself that he presented it to Mr. Lee, owing to Mr. Lee being so greatly struck by its beauty, but from Mr. Lee I understood he bought it with other plants. At any rate it passed into Mr. Lee's possession and there flowered, a flower being sent to Professor Reichenbach, who described and possibly named the plant. At the commencement of last year I believe Mr. Bull bought a portion of the original plant back from Mr. Lee, and sold one part to Mr. Massarel, the well-known Ghent orchidist, who resold it at considerable profit to M. Jules Hye Leysen, who divided the plant, keeping one portion himself, the other portion coming, in exchange for another rare Cypripedium, to me. One other portion of the original plant went to Mr. Tautz's well-known collection, the price paid indicating the estimation in which Mr. Bull and Mr. Tautz held it."

It will be seen that there are a few minor differences in the accounts obtained, but they are worth placing on record in reference to such a valuable plant.—L. Castle.

ORCHIDS AT FOREST HILL.

The following Orchids are in flower just now at Messrs. John Laing & Sons' Nurseries, Forest Hill, London, S.E.—viz., Calanthe Veitchi, Cattleya exoniensis, C. Trianæ, and C. Trianæ delicata, Cypripedium Boxalli, C. Dominianum, and C. insigne, Dendrobium Ainsworthi (fine), D. infundibulum, D. fimbriatum, D. heterocarpum, D. nobile, D. cœrulescens, D. pendulum, D. Pierardi, Dendrochilum glumaceum, Lycaste Skinneri, Masdevallia ignea (Patersoni), M. polysticta, M. tovarensis, Odontoglossum Alexandræ constrictum, O. grande, O. Lindleyanum, O. Rossi majus, Oncidium cucullatum, O. Forbesi, O. ornithorhynchum, and Pilumna fragrans.

ORCHIDS AT STUDLEY HOUSE, HAMMERSMITH.

This collection has been previously noted in this Journal, and is especially remarkable for the large numbers of Cypripediums—some 200 varieties—it contains with many rare and beautiful forms in excellent condition. On a recent visit I found the following, amongst others, in flower :—C. nitens, a cross between C. villosum and C. insigne Maulei ; the dorsal sepal is in the way of Maulei, but larger ; the petals wavy, light brown, very glossy. C. Hartwegi, beautiful rose colour, in the way of C. Roezli. C. Argus Moensi, very fine, being heavily spotted with dark purple spots, the dorsal sepal white, with green lines and spots, not so large as on the petals. C. Ashburtoniæ var. calospilum is the best of the Ashburtoniæ group ; the dorsal sepal large, white, tinged with green and veined with purple ; the lip pale purple tinged with yellow and slightly blotched with purple. C. Petri, beautiful, figured recently. C. Marshallianum, said to be the only plant in the country, the result of a cross between C. concolor and C. venustum, the parentage being very noticeable ; a distinct variety. C. insigne var. sylhetense, shorter in the pouch, and more thickly and largely spotted than in the type. C. Tautzianum, a charming and distinct novelty, deseribed in the Show at South Kensington on the 19th inst., when it received a first-class certificate, and was described in this Journal. The handsome C. venustum was represented by some well grown and vigorously flowered examples. Amongst miscellaneous Orchids in flower we noted the old but still good Ansellia africana. It is seldom seen so well grown as we saw it here, and is worth, therefore, putting on record. Zygopetalum Mackayi, another old favourite ; Odontoglossum Insleayi leopardinum, choice ; Lycaste lanipes, Dendrobium bigibbum, &c. The condition of all plants is most creditable to the gardener, Mr. C. Cowley.—B.

ORCHIDS AT TILGATE, CRAWLEY.

Among the other gay and choice occupants of the stoves and greenhouses at the above beautiful estate of J. H. Nix, Esq., the Orchids are not the least conspicuous. The select collection of Cattleyas, Lælias, Dendrobiums, Cypripediums, Calanthes, &c., look full of vigour and furnished with stout growths or flowers in various stages ; more especially is this notable in the Odontoglossum house. There are about one hundred plants, chiefly of O. Alexandræ, O. Peseatorei, and O. triumphans, with stout bronzy green pseudobulbs and healthy green foliage that are quite in character with the strong fleshy roots and stiff flower spikes bearing from nine to eighteen flowers on a spike. In the collection is a plant of the very beautiful Pilumna fragrans, valuable at this time of the year for its highly perfumed and pure white flowers, the throat only having a slight circle of orange, which adds to its beauty. For buttonholes or sprays it would be well adapted, being of a useful size and pure colour, with a sufficient length of flower stem. All the plants are potted in a mixture of chopped sphagnum, peat fibre, and charcoal, the pots being previously half-filled with broken clean crocks. Under the open latticed stages on which the plants are stood are cement tanks the whole length and width of the stage, which forms a receptacle for the rain water from the roofs and is used for watering the plants. The cement path is also constructed to hold about 2 inches of water, and a latticed grating is laid over it to walk on. The evaporation from these tanks forms the element

that these plants enjoy during their growing season, but there are waste plugs constructed so that the water can be let out when the house is required to be drier in the winter season. The temperature is never allowed to go below 48° or 50° in the winter season. Should a plant be making a new growth while it has a flower spike, the latter is removed to throw all the energies of the plant into the new growth. The marvellous development of these plants that were only small imported pieces three years ago is proof that the construction of the house and the treatment they receive is another instance of the thoughtful work and intelligent skill displayed by Mr. W. Jordan, the gardener, in everything he takes in hand.—C. O.

PLANTS AND FLOWERS IN THE HOUSE.

(*Continued from page 66.*)

Amaryllises cut with the stem the full length are grand for large glasses. So also we occasionally cut trusses of Eucharis and Imantophyllum with long stems, and all these should stand clear of every other flower or leaf. Small vessels of glass or metal are very pretty set about tables. It is the worst taste to crowd these ; a few sprays of Lily of the Valley with a leaf or two, a good specimen bloom of a Chrysanthemum, one or more good Roses, or a spray or two of any Orchid, with an accompanying spray of Maidenhair Fern or Asparagus is all that is wanted. When flat dishes are used we like to fill these with whatever is employed. Almost any kind of flower is admissible so long as it is not tall. In arranging them we use nothing but water to keep the flowers fresh, but fill in with some green material, such as Box, sprays of Myrtle, scented Pelargoniums, &c., Roses, Chrysanthemums, Eucharis, Orchids, Tulips, Pelargoniums, Ivy-leaf especially, Chinese Primulas, common Primulas, Polyanthuses, Auriculas, Camellias, Snowdrops, Crocuses, &c., being all admissible. If very choice flowers are used a good spray or two of Maidenhair Fern, put in after the flowers have been arranged, and standing boldly out from among them, gives a good finish. Certain Grasses, bits of Bamboo, the leafage of the flowers employed, &c., may all be used, but never in excess.

In small rooms, especially those with low ceilings, small plants and the smaller flower glasses should be used. In cases where groups of plants are wanted one can hardly have too many Maidenhair Ferns. Isolepis, Ficus repens, and Panicum variegatum, Bambusa Fortunei variegata, small plants of Asparagus tenuissimus, and A. plumosus, and Cyperus alternifolius are also useful. If flowering plants are scarce these can be used as a full groundwork, and just a few plants in flower dotted among them. Indeed in any case it is well to avoid making groups heavy with many large plants.

But when we have all arrangements of plants completed there are numerous little points to be observed in order to keep them in health and make flowers stand as long as possible, and in providing a continuous supply. If plants were merely taken into a room for a day or two it would not matter so much, but when they are kept there for many weeks then it is necessary to pay particular attention to see they do not suffer. If a room is kept only moderately warm there is little fear of harm, but when they are kept hot the plants in dark position suffer very quickly. Of course often changing is perforce the rule in such cases. All plants taken into rooms should be in good health (that is a first principle), clean, no insects present, and the roots healthy and active. Water should be given before it is placed, and afterwards keep the soil moist and never on any account allowed to become dry. In order to use as little water as possible, and make sure that it quickly goes through the soil, we have for the past year or two used warm water for all house plants. An occasional syringing with warm water and soap or sponging the leaves with the same mixture will keep the plants free from dust, make them look fresher, and be better for their health.

Flowering plants should be selected which are not quite as far in flower as they will be. This applies to all kinds, Dutch bulbs, Lily of the Valley, &c., as well as others. When it happens that no plant will be tolerated in a room which is declining ever so little in beauty, the force of so selecting fresh young specimens will be more readily understood. With regard to cut flowers. It is of the utmost importance, in order to keep up a continuous supply of good flowers, that the proper stage to cut them should be understood and acted on. If, for instance, a number of Pelargoniums only half developed in the truss were cut, and others were on the plants fully developed, the result would be that the latter would be past before using, and those cut too quickly would be wanted later on, when they would be quite as good. But further, supposing the Pelargoniums cut were the only ones to be had, there might be some other flower developed to its utmost extent, and which required cutting, and thus the same effect would ensue. Of course there is the alternative of drafting them into cooler drier quarters, but where an establishment is in full swing, and the most wanted out of everything, it does not pay to stop a growing plant when it happens that the more growth it makes the more it flowers. Placing flowers in water during winter is not a good way to keep them —that is to say, if they are expected to stand any time in vases. It is much better to put them into a perfectly cool room, either in a nearly close tin box, or if not to be kept long they may lie open. Of course every flower will not keep in this way, but very many do. When used, the end of the stem is cut off and the flower treated to a little warm water, but in all cases it is best to cut from the plant as wanted. For keeping flowers fresh and good nothing excels pure water in the vessel in which they are arranged The latter must be kept perfectly clean, not only on account of its appearance, but also on account of the flowers. Deep stemmed glasses are easily cleaned by means of brushes on flexible wire stems, the upper portions being rubbed with a sponge or a cloth. The water used should not be too hot, lest the glass should crack. When well cleansed rinse in cold water. Dry the outside with a proper cloth, fill with sufficient lukewarm water, and then arrange the flowers. The next day the glass will require filling with water. Flowers should not stand longer than a week without rearranging. The stems of good flowers should be washed in warm water, a portion cut off each, the glass again cleaned, and fresh water supplied.—B.

MUSHROOM HOUSE WITH A GLASS ROOF.

Mushroom houses in many instances are not what they ought to be in private gardens, and the gardener is blamed for any deficiency in the supply of this delicious esculent, therefore any hints that may be of use are worth recording. The roof of our Mushroom house being in a bad state, we thought of renewing it, and the question arose as to how it should be done. Having carefully read the practical treatise on the cultivation of Mushrooms by Mr. Wright, we thought a departure might be made with safety. Taking as our guide what Mr. Wright in the above treatise calls the easiest of all systems of culture, pages 75 and 76, in a Melon or Cucumber frame we put on a glass roof, using quarter-inch rolled plate glass in large sheets 4 feet 6 inches by 1 foot 3 inches, with a 6-inch lap, two of the sheets being used as ventilators, the framework being galvanised T iron. The house is of the usual description, a lean-to behind a north wall with the beds in tiers of slate slabs, supported by cast iron and heated by a flow and return pipe placed in or under the cast-iron pathway.

On the 17th September we spawned our first bed ; this came into bearing in six weeks. On October 17th a second bed was spawned, and this came into bearing in seven weeks. On November 16th we spawned a third bed, and this also came into bearing in seven weeks. The quality was about what is usually found in private gardens, as you will see by the seven I enclose to show you the average quality, as we gather them every morning. I may mention the beds are 20 feet long by 3 feet wide and 1 foot deep at the front, sloping to 1 foot 6 inches at the back, with a slight covering of stable litter on each, which answers two purposes, keeping both moisture and temperature at a regular point.

I will now tell you why we decided on using glass. We only require a supply of Mushrooms six months in the year, the house being empty and useless the other part—at least four months ; that is what we will call under the dark system. Now, I think we can make the house useful during these four months, besides being better adapted for forcing such things as Rhubarb. Asparagus and Seakale we find succeed in the same house in a part specially darkened. All things considered, we think we have made a decided improvement, and we shall be very pleased if any of your readers are able to pick what Mr. Iggulden calls a "wrinkle" out of the above narration of facts.—A. Haggart.

[The Mushrooms received were very fine indeed.]

SIZE versus QUALITY.

While this question is under consideration it would be a step in the right direction if other authorities would follow the example of your able correspondent, Mr. Thomson, and record their opinions thereon, in order that a right conclusion may be arrived at as to what should be a standard of quality. If this could be accomplished it would be a boon to many. I think the most glaring instances of size being preferred to quality is to be found at the Scotch shows. For example, at the last Edinburgh International the first prize in the big Grape class was awarded to huge unripe exhibits, while the third prize in the same class was awarded to as neat a collection as one could wish for, every bunch of equal size, varieties of good quality, perfectly ripe, and without a blemish. In this case I knew neither judge nor exhibitors, yet I felt more dissatisfied with this

award than with any other in the whole exhibition. Again, we find both the Veitch Memorial prizes were awarded to exhibits where size predominated and quality was ignored. I commented upon this at the time, and was told it was a matter of opinion, which is the usual loophole. The important question to be settled now is, How is this loophole to be stopped? I see no better way than for committees to make rules and adhere to them, otherwise they are worse than useless, as was the case at Newcastle-on-Tyne, where the rules for the Jubilee prize clearly stated that all fruit must be ripe and fit for table, yet the premier honours were bestowed upon exhibits half of which were uneatable, for who would think of using Beurré Diel Pears, Warner's King Apples, Green Citrons, and Palm seeds in August?

Another question that ought to be settled is whether Tomatoes are to be classed as fruit or vegetables, or whether they may be exhibited as either or both, at convenience? If Dr. Hogg would add Tomatoes to his "Fruit Manual" it would perhaps decide the question. At the show mentioned they were included in collections of both fruit and vegetables.

There are many societies whose funds do not admit the committee to offer prizes for separate varieties, a prize is therefore simply offered for black Grapes; we find several varieties staged in this class, the judges being so prepossessed in favour of the old Black Hamburgh that they award the prize to it, whether red or black, in preference to other varieties, let them be ever so good. At the Crystal Palace last year there was some dissatisfaction in the "any other black Grape" class, where some superb Lady Downe's received the first prize in preference to "ordinary" Muscat Hamburghs, and because I quite agreed with the judges in this case I was advised to "taste the difference," but I did not do so, as I condemn the tasting system; it often disfigures exhibits, and I maintain that unless a man can judge with his eye he is not qualified to judge at all.

Mr. Thomson, on page 59, condemns large things, from Grapes to Gooseberries. I do not agree with such a sweeping verdict, as I find nothing more appreciated than Royal George Peaches 15 ozs. or 16 ozs. each; Elruge Nectarines 10 ozs. or 12 ozs. each; President Strawberries twelve or fifteen fruits to the pound, while the nearer a pound each Marie Louise Pears are the better they are liked. As to Melons. If the sort is good and the fruit well grown and ripened it matters very little about the size. I have an excellent green-fleshed beautifully netted variety producing fruit 18 lbs. or 20 lbs. each. These are quite as good in quality as other sorts, producing fruits 2 lbs. or 3 lbs. each. I think the same remarks apply to Apples. If the variety is good it matters little how large they are grown. With regard to Grapes. If the variety is good let us by all means encourage large berries, as they contain most flesh, which is the substance most relished. I do not believe in small berries, which are mostly skin and stones. Where Cannon Hall Muscat is well grown it will be found the best example of a good Grape that I know; but I may relate a curious incident in connection with this variety. In 1873 I exhibited good samples of it at Manchester, and only received third prize. This was a surprise to many as well as myself. On inquiry I was told the berries were fine but deficient in stones, many of them only containing two or three each. The same year I was ordered not to send Black Prince or "Barbarossa" to table again, because the berries contained too many stones, and I was to grow Cannon Hall as much as possible on account of its few stones and thin skin.—J. H. Goodacre.

I have been driving a wedge against immoderate size in flowers, fruit, and vegetables in these pages for the greater part of my life, and I need hardly say that I read with great pleasure Mr. D. Thomson's article on the subject, for to find a man like him casting a vote against immoderate size in produce leads one to hope that many other capable authorities will follow suit to try to disabuse an indiscriminating public to avoid mere size as being a "delusion and a snare." I find I must have been penning a letter to a correspondent about the same time Mr. Thomson was writing his advice to the readers of the Journal.

The letter was in reply to one (enclosed) from a correspondent and is as follows:—

"I have scarcely made up my mind whether to allow my seedling Potato Faith to go into commerce, as the public fashion now dwells upon such large produce, especially in huge Potatoes. When large types of Potatoes offer in my new seedlings I invariably destroy the stock, as I well know they would prove a delusion, in containing comparatively too small a quantity of nutriment and too large a proportion of water. In fact, I have given up raising Potatoes for the seed merchant or for market purposes, for of course the seedsmen or the purveyors for the markets purchase only what they can sell, and if either of the above objects is your case I fear my Potato Faith would not suit you. It is a Potato suitable for a connoisseur's table and limited garden space, and it is what may be termed an all-round variety—viz., it is early and keeps well till planting time comes round again.

"But how the world turns round! The beginning of Faith had its origin in the Vicarage garden of Stanton Lacey in 1837 as a selection from the old Ashleaf Kidney. Selection only was thought of in those days, which after many years of trials was found to produce no permanent improvement in types. Then followed cross-breeding by pollen, and from that day to this I have handed down the blood of our best old varieties, and within the last twenty years I have blended with it the best qualities of the American sorts, and thus obtained a pedigree for quality distinctly in opposition to the unstudied indiscriminate monstrous kinds that are meant merely to satisfy the eye and the breeches pocket rather than for human sustenance. Besides, almost every sort that I have sent into commerce or not have gained first-class certificate honours at Chiswick, and the beginning of it was, as I mentioned above, at Stanton Lacey, where possibly my name may not now be even known."—Robert Fenn.

GOOD VEGETABLES.

I should like to supplement "B.'s" remarks on page 26. Snowball Turnip fully deserves all "B." says in its favour. I continue to like Early Snowball Cauliflower, which, I suppose, is really a form of Early Erfurt.

Sutton's Little Gem Cabbage is the earliest and most delicate flavoured Cabbage I know; it is a treat to partake of a dish of that variety. All the plants not required for planting out and left in the seed bed produced small and beautifully compact heads a few days in advance of those transplanted.

Prince of Wales Pea is an old and well-tried friend, medium in height, superior in flavour, an enormous cropper when well grown, and is suitable for all gardens.

Dell's Crimson Beet with me holds its own in general quality against all comers. There are varieties that produce foliage of a deeper purple and roots of slightly deeper crimson, but I prefer the above for general cropping and eating qualities combined.

Handsworth Large Late White is the best late Broccoli I have grown. It comes into use in May, is very hardy, very delicate in flavour, and, after ten consecutive years' trial of it it has never disappointed me, which is more than I can say of many varieties more generally known.

Neepsend Pink Celery, a variety local to Sheffield, is perfectly hardy, crisp, tender, nutty, and scarcely ever "bolts." It is the most reliable variety I have grown.—J. Udale, *Elford*.

THE SIZE AND AGE OF YEW TREES.

I have been with my friends measuring several big Yew trees in the south-east corner of Hampshire. Will you allow me to state the result in the *Journal of Horticulture*, with a view to learning about other big Yews, and with a view to discussion as to their age? I give the circumference, the smallest circumference, of each of four trees in three neighbouring churchyards:—

	ft.	in.
1. In Warblington churchyard	18	4
2. In Bedhampton churchyard	20	0
3. " " "	20	5
4. In S. Hayling churchyard	33	0

Reckoning a year for every line of diameter, or twelve years for every inch, this would give to the Hayling tree, with a diameter say of 11 feet, or 132 inches, an age of 1584 years. Will any of your readers contribute any information as to big Yews, their size, and the mode of ascertaining the age?—P. J.

DAFFODILS IN POTS.

These are not grown nearly as much as they deserve to be. We have about 150 bulbs in pots, some of them in 4-inch, and the remainder in 3-inch pots. We place three bulbs in the former, and one in the latter size, and some have three blooms to each bulb. To have these in flower at the new year is quite a simple process. We pot the bulbs in the first week of September, stand them on a hard bottom, and cover them 3 inches deep with coal ashes. There they remain until well rooted, then remove them to a cold frame, and slightly shade them for a week or so, for if allowed too much light at first after removing them from the ashes they are apt to go blind and not flower. As to the time they will be in flower all will depend upon how they are managed. Never place them in strong heat, 45° to 50° I find suits them best.—John A. Calthorpe.

NEW CANNAS.

Cannas are recognised as useful plants for sub-tropical gardens and large conservatories, but they are not generally regarded as of much value as pot plants in houses of moderate size. In France much attention has been paid to them, and scores of varieties raised of most diverse

colours and habit. A dwarf race has now been formed with large flowers having exceptionally broad petals, and the varieties of this section possess considerable decorative value. Some flowers of these were shown at South Kensington by Messrs. H. Cannell & Sons, Swanley, last year, and they call attention to some of the varieties in the cut (fig. 14) kindly lent us by that firm. The colours vary from deep crimson and scarlet to orange and yellow, either self-coloured or spotted and streaked with other tints, giving them in some cases a very unique ap-



FIG. 14.—NEW CANNAS.

pearance. The foliage also differs, bronze, purplish, dark and light green tints prevailing. A long list of new varieties is given in Messrs. Cannell's "Floral Guide."

PACKING FRUIT.

THIS is an operation most gardeners have to perform, and success often is as varied in packing fruit as in cultivating it. The hay process recommended by Mr. Pettigrew, page 8, is one I have known the last forty years, and have long since discontinued it, for two reasons—first, because it is of a flexible nature and not elastic, which is so essential in the safe packing of all soft fruits; and last, but not least, because the "sweet" or "fusty" smell which is always present is most objectionable. Mr. Pettigrew says some gardeners of considerable experience use dry moss or paper shavings. It certainly would be interesting to know why Mr. Pettigrew prefers hay, which is all the more to be regretted, seeing that he has spared no pains in describing the entire arrangement of the box referred to that has always been such a success. But in case the box should be turned upside down in its transit, "which is by no means an unheard-of occurrence," I am unable to see how Grapes could escape being crushed by the weight of Pines, Melons, Cucumbers, &c., being suddenly placed on them. Evidently Mr. Pettigrew's boxes have always travelled right side up, which is most creditable to the officials on that particular route.

Again, referring to Mr. Pettigrew's mode of Grape packing, I fail to see how the bloom is preserved. The large bunches we find are first placed in the four corners of the box and then wedged in with smaller bunches, covering them with paper, and on the paper a layer of hay; yet, strange to say, Mr. Pettigrew's Grapes always look as fresh after the long journey as if they had been newly cut from the Vines. I must plead ignorance as an excuse for my inability to catch the secret of this success, as I have yet to be convinced that "anything" touching the

bloom of Grapes can preserve it. Mr. Pettigrew's partition box and materials, hay excepted, for Peach packing is excellent, but his mode of rolling the Peaches in the material, and then dropping them into these compartments, is quite novel to—R. W.

Notes & Gleanings

EVENTS OF THE WEEK.—To-night (Thursday), at 8 P.M., the Linnean Society will hold a meeting at Burlington House, Piccadilly, at which it is announced that Harry J. Veitch, Esq., will contribute a paper on "The Fertilisation of Cattleya labiata var. Mossiæ." Mr. H. F. Blanford will also have a paper on "The Ferns of Simla." The Royal Society meets on the same day at 4.30 P.M., and the Society of Arts on Wednesday, the 8th inst. The usual Orchid sales will be held in the Cheapside Rooms on Friday and Tuesday, and at Covent Garden on Thursday and Wednesday.

—— REFERRING to POINSETTIAS PLANTED OUT, "A. H." says:—"I am very pleased to notice that at least one other person has a Poinsettia planted out. Ours has only been planted three years. The first year we cut a head that measured 22 inches across, composed of eighty bracts."

—— THE WEATHER IN THE NORTH.—"B. D." writes:—"The weather was very mild up to the afternoon of the 26th ult., when frost set in, 3°, 8°, 12°, 6° of frost being recorded on the last four nights During the night of the 24th the thermometer in the open stood at 47½°. The eclipse of the moon was observed throughout in a cloudless sky. A snowstorm was pretty general over Scotland on the same day, drifts of 6 feet and upwards being reported from some of the N.E. counties. On the 30th ult. in South Perthshire the ground was thickly covered with snow, and frost was somewhat keen." In the south of England the weather has been variable, several sharp frosts alternating with rain, sleet, and very little snow.

—— WE learn with a deep regret, which will be shared by many persons in this country, that PROFESSOR ASA GRAY, a botanist of world-wide fame, died on January 31st, at Boston, Massachusetts. This gentleman was born at Paris, in the State of New York, on November 18th, 1810, and was educated for the medical profession, but applied himself closely to botanical studies, to which he has devoted his whole attention since 1831. In 1864 his herbarium amounted to 200,000 specimens, which with a library of 2200 botanical works he presented to the Harvard University. He was for ten years President of the American Academy of Arts and Sciences, and was subsequently elected to the same position in connection with the American Association for the Advancement of Science. He was also correspondent and honorary member of numerous scientific societies in Europe. His botanical works include several admirable popular treatises that are distinguished by a singular lucidity of expression, and his "Flora of North America" is a most valuable work of reference.

—— WE also regret to announce the death of Dr. J. T. IRVINE BOSWELL, which took place on the same date—namely, the 31st ult.—at Balmuto, Fifeshire. Dr. Boswell was for many years Curator for the London Botanical Society, and lecturer at the Charing Cross and Middlesex Schools of Medicine; but his chief fame as a botanist was derived from the fact that he re-wrote "Sowerby's English Botany," a most extensive work in twenty volumes, and which occupied his attention for twenty years.

—— WE learn that Messrs. Sutton & Sons' useful work, the "CULTURE OF VEGETABLES AND FLOWERS FROM SEEDS AND ROOTS," has been awarded the first order of merit and highest prize medal as a horticultural book at the Adelaide International Exhibition, making seven similar awards to the exhibits of the firm at Adelaide.

—— MESSRS. J. VEITCH & SONS, Kings Road, Chelsea, have received the following letter from Mr. H. E. Kennedy, The Gardens, Downton Hall, Ludlow, Salop, which they forwarded to us as requested:—"I have this day sent two flowers and foliage of a plant of Cineraria growing in an 8-inch pot, the seed being supplied by you last year. The foliage measures 17 inches in diameter; one flower being 2¾ inches across, the other 2½ inches. Is it a common occurrence to see them so large? It is not only one plant, for I have three dozen in flower. I should be glad if you would forward them to the *Journal of Horticulture* office if you think it is worth while doing so. All the people that have been here, including gardeners, say they never saw such foliage and flowers on Cinerarias before. I may also state that the plants are from 2 feet to 2 feet 9 inches across, and are grown in 8-inch pots." The flowers sent were of rich colour with very thick florets, and the leaf of wonderful size.

—— THE LIVERPOOL HORTICULTURAL ASSOCIATION held their ninth annual meeting on Saturday evening last. Towards the close of the proceedings a lively discussion arose between Messrs. Bardney and Cox. It appears that the Society's receipts for the last year or two have slightly fallen off, while the amount in schedule of prizes has been increasing. To remedy this Mr. Bardney very prudently spoke in favour of a more economic schedule. Mr. Cox in a very energetic manner defended and upheld the Committee in providing so liberal a prize list, and was sure that the course taken was a wise one for the welfare of the Society. The question, no doubt, will be brought forward at the next meeting.

—— NO. 13 of the KEW BULLETIN for January was recently issued, and contains a continuation of a subject introduced in the November number last year—namely, "Colonial Fruit." The Colonies under consideration are Victoria, South Australia, Western Australia, Tasmania, New Zealand, Cape Colony, and Mauritius. Lists of fruits grown in these countries, and in some cases the local prices, are given. Thus, in the case of South Australia a list of twenty-seven fruits is supplied, with the times when they are in season, the relative quantities and prices. For example, Grapes are said to be in season from January to May in unlimited quantities, at 7s. 6d. to 10s. per cwt.; Apples, January to October, in larger quantities, 2s. 6d. to 5s. per bushel; Apricots, December to January, unlimited quantities, 16s. to 24s. per cwt.; Pears, December to July, 3s. to 6s. per bushel; and Peaches, December to February, 16s. to 24s. per cwt.

—— MR. JOHN F. PASCOE furnishes the above particulars, and he further mentions in reference to the export of fruit to this country from Australia that "A bushel of Apples costing in Adelaide 4s., sent to England in the ordinary way would have to realise nearly 9s. to pay the shipper net cost. To give an example. Per Orient steamer 'John Elder,' I sent last year to the Colonial and Indian Exhibition fifty cases of fruit, which realised £55 3s., a good price, and ought to have shown good profit; but the expenses were—Commission, &c., on sale by commissioners, £33 15s. 4d.; freight and incidental expenses, £7 14s.—total, £41 9s. 4d., or, deducting the cases £2 10s., a balance of £11 3s. 8d. from the sale total—about 4s. 6d. per bushel. Considering this lot consisted of the choicest samples obtainable it certainly gives very little encouragement." There is something extraordinary about the commission charged in this case, and over 60 per cent. is what few salesmen would have the audacity to charge. Those who remember the fruit market at the exhibition mentioned will also remember that the charges were very high.

—— KINGSTON AND SURBITON CHRYSANTHEMUM SOCIETY.—We are informed that at the recent meeting of the above Society it was unanimously resolved to offer another challenge cup, value 25 guineas, with the usual money prizes.

—— MR. W. DYER, Park House Gardens, Edgbaston, Birmingham, the well-known specimen Chrysanthemum grower, desires to state that he has found Wood & Sons' liquid manure powder of service to his plants.

—— A LIST of seeds for the year 1888 has been issued from the CAMBRIDGE BOTANIC GARDEN containing the names of those in stock for exchange with other botanic gardens, as well as the names of plants of which seed is required. The list fills fifteen closely printed pages, and the plants are arranged under their natural orders.

—— WRITING in reference to OUR BENEVOLENT INSTITUTIONS, "D. S." makes the following suggestion:—"I should like to suggest to the committees of every horticultural society in the kingdom, that special effort should be made by each society to help the funds of the Gardeners' Orphan and the Gardeners' Benevolent Societies. Even an

annual subscription from each would do a world of good, but many societies have goodly sums of money in hand, and could well spare £5 or £10 to those most deserving charities. Individual members also can do the orphan fund especially a great service by collecting small sums and transmitting them to the Secretary. Mr. Hughes, the Secretary of the Birmingham Chrysanthemum Society and the Birmingham Gardeners' Association, has a collecting box in which donations from a penny upwards are welcomed, and he has already remitted to the Secretary a good sum of money collected in this way. In these times of depression generally, and in gardening especially, the calls upon these two charities will grow rapidly, and it is therefore most desirable that increased funds should be possessed by the executive of these Societies, and I think that if a special appeal was made to each horticultural society in the kingdom, stating what each was doing, so that the matter may be brought before each Committee, that good results would follow."

—— Mr. Richard Gilbert is a very clever man, and almost merits a free advertisement for the following trite observation. He writes—"My advertisement last week, and Mr. D. Thomson's leader, will hand down the *Journal of Horticulture* to posterity?" How very fortunate for the Journal, and, shall we add, Mr. Gilbert?

—— Mr. Obadiah King, Secretary of the Maidenhead Horticultural Society, informs us that the annual Show is fixed for Thursday, August 16th, 1888.

—— A well-known north of England naturalist, Mr. J. D. Siddall, of Chester, has recently been lecturing in Wakefield, and has given much satisfaction to the numerous local gardeners and naturalists who attended his fluent and interesting extempore discourses. Mr. Siddall has made a special study of the Foraminifera of the River Dee, and we remember a year or two since seeing a microscopical slide he had prepared containing 150 distinct species in the space of about a square inch. A lecture was also devoted to the Canadian Water Weed, the Anacharis, which was discussed very fully. He mentioned as an example of its rapid increase that 3000 tons were dragged out of a loch near Glasgow, which had been cleared a year previously. Mr. Siddall stated that the chief reasons why the plant increases so rapidly here while it advances but slowly in America, are that the currents of the rivers are much slower here than there, and also contain much more refuse or pollution. He thought it would gradually die away and disappear.

—— Gardening Appointment.—We are pleased to be able to announce that Mr. C. Orchard, late of Coombe Warren, Kingston-on-Thames, has been appointed bailiff of the estate of The Brading Harbour Company, St. Helens, Isle of Wight. His address will be Bay View, Brading, Isle of Wight.

THE HOLLYHOCK.

The Hollyhock has recently been written about in the Journal, its return to the front rank of florists' flowers being prophesied, and I am quite prepared to predict the same thing. In some districts really good Hollyhocks are shown annually, but unfortunately not from the gardens of many cultivators. It would have been a great pity indeed if those majestic flowers had been allowed to die out of cultivation, for to my mind they are the most attractive and beautiful the autumn brings us. Thanks, however, to the energy and skill of some horticulturists who have taken them in hand, they are saved from the dying out process. We happen to have one of these men in our district—namely, Mr. G. Finlay of East Layton Hall, who has certainly the best Hollyhocks I have ever seen. He has been at work with them about eight years, and has wrought wonders in obtaining new and excellent varieties. I had the pleasure of seeing his plants in bloom last year, and what a marvellous sight they were! The colours ranged from a white to the deepest of crimsons and purples, some of the flowers measuring 8 inches in diameter without the guard petals. Mr. Finlay has a few excellent seedlings, and has a good stock of three of his best, which I believe he intends sending out next autumn—namely, Pride of Layton, a beautiful deep salmon coloured variety, of splendid form and robust constitution; John Finlay, a very large and especially deep flower, of a dark red colour, devoid of salmon tint (which is unusual in Hollyhocks), this is a variety of great merit, also of vigorous constitution. The third is a pink of the most perfect shape and lively colour. It is a rosy pink, lighter towards the base of the flower. There are a few more excellent seedlings, but as yet not a large stock of individual sorts. I should say Mr. Finlay has twelve seedlings in his possession that would surpass any other twelve Hollyhocks in cultivation. The Layton Hollyhocks are famous wherever they have been shown, which is not a few places, as Mr. Finlay has won about fifty first prizes and only one or two seconds. The much-dreaded Hollyhock disease once found its way into the Layton collection and made great ravages one summer, but he set to work and completely overcame it in a very short time. The process, too, is very simple, yet effective, and I daresay Mr. Finlay would describe it if desired to do so.—F. M.

[We shall be glad to publish a note from Mr. Finlay on the subject.]

NATIONAL CHRYSANTHEMUM SOCIETY.

January 31st.

The annual general meeting of the above Society was held at "Anderton's Hotel," Fleet Street, on Tuesday last, when there was a good attendance of members. The Vice-President, R. Ballantine, Esq., took the chair shortly after 7 p.m., Mr. E. Sanderson being unavoidably absent, the Treasurer, J. R. Starling, Esq., and the Hon. Secretary, Mr. W. Holmes, with others, being present. Mr. Holmes read the report for the past year, of which the leading points were as follows:—"The result of the operations of the National Chrysanthemum Society for the past twelve months may be truthfully recorded as that of an unqualified success. Good and useful work has been accomplished in each of its departments, while its finances have been equal to the heavy strain imposed thereon. The September Show was again considered both good and interesting, although the early varieties of Chrysanthemums do not as yet seem to have taken a very firm hold of popular favour. Dahlias and Gladioli, however, formed as before a very attractive display. Of the November fête too much can scarcely be said. It was in every respect the largest and most attractive Exhibition ever yet held under the auspices of the Society. The buildings were well filled during each day, while in the evening the crowds were enormous, no less than 10,000 persons (exclusive of staff entrances) passed through the turnstiles on the first day of the Show. The January Show was vastly superior to that of any preceding year. Chrysanthemums were largely staged, although as yet the object of the original promoters of the midwinter Show has not been largely fulfilled by the introduction of many naturally late-flowering Chrysanthemums. The Floral Committee steadily carried on its work during the season, and its decisions in every instance carefully debated.

"The business meetings of the Society will for the future be held at 'Anderton's Hotel,' Fleet Street, the Society having outgrown the accommodation of its old quarters, and Fleet Street being considered to be more central, and consequently more convenient, for its members generally. The Committee desire to tender their very hearty thanks to all donors of special prizes, and especially to the Trustees of the Veitch's Memorial Fund for the liberal grant of medals and cash during the past season."

The balance-sheet was next read, from which it appears that about £700 have been received and expended during the past year, leaving a small favourable balance besides the reserve fund, which Mr. Starling stated now amounts to £78. Subscriptions were received from 432 members, but the number has been considerably increased at the last two or three meetings. Both the report and the balance-sheet were unanimously adopted, and votes of thanks were accorded to the Auditors.

The Hon. Secretary announced that Lady Lytton, The British Embassy, Paris, had signified her willingness to become a patroness of the Society, a number of Fellows and members were elected, and the Wimbledon, Tooting, and Pembroke Societies were admitted into affiliation. The next business was the election of officers, the following being unanimously returned:—President, E. Sanderson; Vice-President, R. Ballantine; Treasurer, J. R. Starling; Hon. Secretary, W. Holmes; and Auditors, Messrs. Crane and Drain, jun. In accordance with the rule passed at a previous meeting one-third of the General Committee retire annually, but are eligible for re-election. The following were elected to fill the vacancies thus caused, and who retire in 1891—namely, Messrs. W. Blake, F. Bingham, Lewis Castle, W. Davey, F. J. Long, J. Newton, R. Nichols, R. Payne, R. E. Reeve, J. Udale, J. Williams, and H. C. Wildman. It was proposed and adopted that the Floral Committee should be elected at the first General Committee meeting, that it shall consist of fifteen members, and that one-third of these shall retire annually. Liberal special prizes from Messrs. Sutton & Sons, Reading, Wood & Sons, Wood Green, and H. Cannell & Sons, Swanley, were then announced to be offered at the November Show.

Several projects for the present season next came under consideration, and the first was a proposal that the Society should hold a provincial show in the north of England, concerning which Mr. Holmes read some correspondence that had passed between himself, Mr. Morton of Darlington, and Mr. E. Mawley, Hon. Secretary of the National Rose Society. The general feeling of the members present was in favour of the idea if it could be carried out without incurring any material financial risk, and it was ultimately resolved to refer the matter to a Sub-Committee, comprising Messrs. Bevan, Castle, Gordon, Dean, and Rundell, for full consideration and to prepare a report to be submitted to the General Committee. Until this matter is settled it was felt that the dates of the Society's shows could not be all fixed, but it was decided that the November Show should be held on the 7th and 8th of that month.

With reference to the proposed revision and extension of the catalogue there was a short discussion, some members thinking a select list was required, and others, who appeared to be in the majority, thought it should be rendered as complete as possible. This also was finally referred to a sub-committee, consisting of Messrs. Castle, Gordon, Wynne, and Harman Payne, who will prepare a scheme for the consideration of the General Committee.

It was decided that the representatives of affiliated societies should be entitled to only one vote whether they represent one or more societies, and Mr. Rundell earnestly pressed for a definition of the term amateur that would admit a number of growers who cannot compete with any chance of success under the present arrangements. He thought an amateur might be defined as one who "does not employ skilled labour, and who does not sell plants, cuttings, or flowers."



ROSES FOR A COLD WALL.

I WAS very pleased to see that the Journal has devoted a special column to Rose-growing, and I should be obliged if some of our Rose-growing friends would give me a list of the twelve best Roses for planting on a wall facing east and north-east, somewhat exposed. I wish to have this wall covered with Roses soon as possible. Would your readers suggest any evergreen creepers as nurses to the Roses? I enclose a list of eleven, and shall be glad to see opinions on them:—Bessie Johnson, Charles Lefebvre, Madame Berard, Belle Lyonnaise, Countess of Oxford, Aimé Vibert, Celine Forestier, Victor Verdier, Dundee Rambler, Gloire de Dijon, and Bouquet d'Or.—A. J. BROWN.

MEMORIAL TO THE LATE M. FRANCOIS LACHARME.

M. LEVÊQUE, on behalf of the Committee in Paris and Lyons organised for the purpose of raising a memorial at the grave of this noted Rose grower, has asked me to distribute some circulars, inviting the co-operation of English Rose growers. Naming the request to some members of the National Rose Society it was suggested that it would be a graceful act if the contributions of the English growers took the form of a medallion with an English inscription on the tomb or monument, and on conveying this suggestion to M. Levêque, he writes that they would gladly accept such a contribution, and would give the English memorial a place of honour. Either Mr. D'Ombrain or I would be happy to receive any contributions to this fund, which I need hardly recommend, so well was Lacharme's name known to all rosarians. Subscriptions of 5s. to 10s. would suffice for all that is necessary.—GEORGE PAUL.

ROSES UNDER GLASS.

IF the unripe ends of shoots have not been removed from Maréchal Niel, Rêve d'Or, William Allan Richardson, Reine Marie Henriette, and others of similar habit of growth that are trained under the roof of greenhouses and other cool structures, it should be done at once. Growths that are too weak to flower may also be removed, for they only have a tendency to crowd the plants and no advantage is gained. Train and regulate the shoots, and, if aphides exist upon them fumigate the structure with tobacco until they are destroyed. If completely eradicated at this period they will not give much trouble when the plants come into flower. Red spider is also very likely to exist upon some of the old foliage, and if this is the case it must be destroyed, or it will prove troublesome the whole of the season. Annual attacks of this insect are often due to their existence on the plants at the commencement of the season being frequently overlooked, and with increased heat their injurious effects are quickly visible. Wash the plants thoroughly with a solution of softsoap one ounce to each gallon of warm water, in which has been stirred a 2-inch potful of sulphur. This can remain upon the plants, and will do them no harm until the season for syringing freely arrives.—B. L.

BUDDING ROSES ON THE SEEDLING BRIAR.

I INTEND budding a few hundred Roses on the seedling Briar as recommended by Mr. Duncan Gilmour in his little work ("Rose-Growing"). The seed was sown the early part of January in the ordinary way, and the box was placed in a good position in the Rose house where the seed will germinate very gradually. The varieties which I wish to increase are chiefly Teas, and will be dwarfs for pot work; and as I am not quite certain which is the best plan to adopt in getting the Briars in the best state possible by the time the operation will have to be performed, I should be glad if Mr. Gilmour would be kind enough to state in the column you devote to Roses whether the Briars produced from this seed if brought on under favourable conditions will be ready for budding by July next, and the best plan in managing the Briars, whether to grow and bud them in pots or plant them out in well prepared ground, and if planting the Briars out should be advised the most suitable time to have the work done.—R.

PEAS AND POTATOES.

NOW so many are busy preparing their seed lists perhaps a few words in addition to the contributions of Messrs. Iggulden, Muir, and Murphy in the last two issues of our Journal may be acceptable. Regarding Mr. Muir's selection of six Peas, I cannot find fault with Lightning and Prodigy, for I have grown neither, but I certainly think Duke of Albany is preferable to Telegraph. I have grown both for several years, and have now discarded Telegraph as being not so good a bearer, not so good quality, and also not so good looking as Duke of Albany, which I have found succeed both in heavy and light soils. Another thing to be considered also is that Duke of Albany is a better show Pea. Wordsley Wonder I am trying this year, and am glad to find Mr. Muir bears out what I have heard from others as to its good qualities. Veitch's Perfection is indeed a good Pea, but is surpassed to my mind by Sutton's Satisfaction. The Peas are truly immense, and when cooked make a very good looking dish, and they do not belie their appearance or name. I wanted to harvest some seed, but I could not save them from the pot, for no other Pea would satisfy the household powers. Another Pea which I found to be a great bearer with high quality is Duke of Connaught, early, and it continues a considerable time in use.

Mr. Iggulden likes Village Blacksmith Potato, but I can see nothing good in it. I have grown it on light and on heavy land, and liked it on neither. Its appearance is not in its favour, and if cooked in their jackets the Potatoes are very apt to fall to pieces when taking off the very thick skin. I have not found it a great bearer, although the haulm has been rampant. I must say a word for my favourite Vicar of Laleham, for I have always found it of good quality, and it suits me better than any other because, although floury, it does not break, and I never knew it to be diseased. Cole's Favourite I do not know, and perhaps Mr. Iggulden will favour us by telling us where it is procurable, and I shall then be pleased to try it on his strong recommendation. Reading Russet is a good Potato in all points, but I have found it sometimes crack very badly indeed, as noted by your correspondent "E. B."

Mr. Iggulden ignores three of the best Potatoes—Victor, which I have found best of all for frame culture and early work; a kidney with a beautiful skin, short haulm, and of good quality. Beauty of Hebron, which I always find of good quality (and its price in the London markets, although it has a coloured skin, shows how it is appreciated), is also a great bearer, and the haulm not being too strong does not exhaust the land The third Potato, to which I would draw Mr. Iggulden's attention as worthy of a trial, is Duke of Albany, which has the advantage over Beauty of Hebron of a white skin. It is a seedling from that variety, and is in all points identical except of better quality. Sutton's Nos. 36 and 44, now Satisfaction and Masterpiece, were very satisfactory, and the latter being very late in starting into growth will be found very useful for late planting without a loss of vigour.

I strongly agree with what Mr. Thomson says as to size in Potatoes. I strongly object to large Potatoes, and always choose medium-sized, I might say small, Potatoes for my table, finding the smaller the Potato the better the quality. What is wanted is a variety that will bear a heavy crop of medium-sized tubers with few chats, having a dwarf but not tender haulm. This is what I want to obtain, but what so far I have found unprocurable.—H. S. EASTY.

OXERA PULCHELLA.

FROM Pendell Court Gardens, Bletchingley, specimens of rare and beautiful plants are occasionally sent to the meetings of the Royal Horticultural Society at South Kensington, but no exhibit from that establishment recently has attracted so much attention as the flowering shoots of Oxera pulchella shown on January 10th this year. There was no hesitation on the part of the Floral Committee in awarding a first-class certificate for it, and the honour was so well merited in this case that it could not be subjected to the criticism sometimes considered necessary. New flowering plants of really sterling merit are too seldom brought into notice now outside the numerous Orchids, and such an addition as this is therefore all the more welcome.

Oxera pulchella is a handsome climbing plant of the natural order Verbenaceæ, related to the Clerodendrons, and is a native of New Caledonia, where it was found during La Pérouse's voyage. A plant was flowered at Pendell Court in December, 1886, and this has flowered freely again this year, as the specimen exhibited well indicated. The plant is a strong climber with smooth bright green elliptical opposite leaves, and the flowers are borne in dense pendulous axillary cymes. The corollas are white, broadly funnel-shaped, with two long stamens and a greenish white calyx of four sepals.

Mr. Frank Ross, who has charge of the Pendell Court Gardens, has obligingly furnished the following cultural particulars :—"The Oxera is an extremely free-growing shrubby climber, producing immense cymes of white flowers usually about Christmas. They are freely produced, both axillary and terminally, on the ripened wood. Therefore, to secure the proper ripening of the wood the plant must be afforded plenty of light; indeed, it cannot have too much, even full exposure to the sun will not injure it. Train it on the glass end of a house up a rafter, or along the ridge of the house, say where there is a lantern top, as these are the positions which would suit it best. Our plant, both this and last year, had by far the finest flowers on the glass end of a cool stove, where the temperature during winter is kept at about 55° to 60°. A fair degree of temperature such as I have mentioned is necessary to flower it, although the plant will live through the winter in ordinary



Fig. 15.—OXERA PULCHELLA.

greenhouse temperature ; but under such treatment we failed to flower it, and it was not until it was moved to its present position two years ago that anything satisfactory was done with it. It flowered the following year and again this year about the same time—Christmas. It is by no means particular as to soil, but a good friable loam seems to suit it best.

"It is easily propagated in the usual way, either by cuttings or seeds, which, judging from what I have seen of it, are produced rather freely ; but cuttings inserted round the edges of a pot in sandy soil and placed in a propagating frame root in a few weeks, and if potted and liberally treated may be expected to flower in about a year, much depending on the time of year at which the cuttings were inserted. As far as I am aware, this is the first and only plant which has flowered in England—possibly in Europe—and is not yet, I believe, in the trade ; Sir George Macleay having brought the plant to England when travelling abroad a few years ago."

ROYAL HOTICULTURAL SOCIETY.

JUDGING from the various expressions of opinion in the Journal and other channels of information, as well as from other sources, an undercurrent of dissatisfaction exists on the nominations for the new Council, or some of them, and it is not improbable that some opposition candidates will be run at the forthcoming meeting. One is heard of who has only quite recently been made a Fellow, as if for the purpose of his elevation, while another is not a Fellow, though possibly he may be enrolled at the next meeting. We shall see. One of the gentlemen already nominated is also a very new Fellow, and has done nothing for the Society in the past. So long as the Society does not include among its older supporters gentlemen who are competent to serve on the Council, whether as amateurs, tradesmen, or gardeners, they must of necessity be sought for outside ; but surely, as a matter both of justice and policy, old supporters, if equally competent with new comers, should be entitled to the first consideration in the filling of vacancies. I am one of those who cannot understand how persons can join any Society for the purpose of getting placed into positions which they covet. If I were to join to-day, and be placed in office to-morrow so to say, I should feel, even if I had no wish for the distinction, that the public would regard me as taking a step for my own exaltation, instead of being animated with a desire to support the Society. Having been a Fellow of the Society a few months I am free to speak on this subject, and should certainly object to be placed on the Council to the exclusion of competent persons who have been supporters of the Society for years. Holding these views I shall not give my vote to anyone who has only quite recently joined the Society, as though he may have not done so with the object of personal distinction he could still have joined before and given himself a better claim, in my opinion, to the suffrages of the electors.—A NEW FELLOW.

PRIMULA SINENSIS CULTURE SIMPLIFIED.

THE PLANTING OUT SYSTEM.

IN drawing your readers' attention to the above system of treating Primulas through the summer, I do so with a desire of urging others to try the plan themselves. Having placed a few dozen plants outside at the end of last June, which were lifted at the end of September, with the result that they have flowered profusely since the last week in October, I can with confidence recommend this mode of growing Primulas, particularly to amateurs who wish to retain old plants another season. I would advise those who possess plants that will be flowering from now to May to plant them outside in June ; such will not need much hardening previous to being planted. If they are planted about 2 feet apart in a position rather shaded, not under trees, but with a few hours' sun on them through the early or latter part of the day, it would be of benefit rather than otherwise. Those desirous of giving the plants a little fresh soil when they are planting might do so with advantage, but it is not really necessary, for they will grow in any good garden soil. If fresh soil be used the finer the better, for then the soil adhering to the roots can be readily removed when they are lifted without injuring the plants. I have several plants that had the soil removed from the roots until they could be placed in 5-inch pots.

I intend sowing seed early in March, with a view of having the plants ready for planting out in cold frames in June, where they will remain until the autumn. I believe this idea will answer, and will commend itself to those who have to provide a large number of plants for decorative purposes. Not half the work will be required when they are planted out in frames as when they are grown in pots through the summer. I find the young plants always do well in their early stages, when they are growing in pans and boxes ; therefore, I think they will do well when planted out in frames for three or four months through the season, and at a time when gardeners are fully occupied. If this method of planting the old Primula plants outside was to become adopted there would be a great many more growers of this most beautiful plant. If they could be purchased in May or June, and treated in the manner described above, I think those not even possessing a cold frame could have them flowering through the autumn and winter. Seed sown in the autumn would produce plants readily for placing outside in May and June following. If growers of plants for sale were to find there was a demand for them at the time indicated I am sure they would soon avail themselves of the opportunity and be in a position to supply plants at a reasonable cost.—T. F. B., *Lancashire.*

[The specimens with others that were received in September afford ample evidence of the success of the simple method of culture described.]

A GOSSIP ABOUT ORCHIDS.

[A paper by Mr. Lewis Castle, read before the Chiswick Gardeners' Mutual Improvement Association, January 25th, 1888.]

THE title of this paper was chosen with the express object of avoiding any expectation of a formal or elaborate essay, and to permit a gossipping discourse on matters orchidic, with an occasional straying into bypaths, and perhaps a little horticultural moralising on the way. If I can thus provide you with a few subjects for reflection, and sundry hints of general applicability, it is of course all you desire and all I can undertake this evening, not because the subject is limited, but because it is so wide that it would only be possible to deal thoroughly with one portion or to glance hurriedly over it generally, and the latter course is preferable, as we can thereby avoid many technicalities that are apt to become tiresome. We will therefore proceed to a few considerations respecting

ORCHIDS AS GARDEN PLANTS.

Orchids unfortunately have many defects, and the greatest of these to the minds of some very worthy and thoroughly useful persons is that their economic value is extremely small. They do not contribute anything to the necessities of life, and with the exception of the exquisite vanilla flavouring to please the palate occasionally, those who derive a large portion of the pleasures of their existence from eating and drinking obtain so little from the Orchid family that they can afford to despise it most vigorously. We are told that utilitarianism is the order of the day, and very rightly too, but with many this also seems to mean a dreary kind of puritanical existence, the abolition of refinement, and the general assumption of corduroy vestments. Then, again, we cannot look to Orchid culture for a remedy in the prevailing agricultural depression, nor can we from a commercial point of view claim for Orchids the financial advantages of the humble Mushroom as depicted in the inimitable Wrightian style. They are rather more expensive to grow than Cabbages or Turnips, and lastly, they constitute the favourite hunting grounds of many voracious and prolific insects.

Such are the principal defects of the Orchids as garden plants, and having given them their full weight it may be worth while to see what can be set off against them. As civilisation advances and wealth accumulates in any country, demands arise for what are termed luxuries—*i.e.*, something outside and beyond what is essential to the mere preservation of life. These modes of disposing of surplus pecuniary possessions of course vary greatly with the dispositions of the fortunate individuals who, luckily for the other portion of the community, are generally desirous of doing so. In old countries or prosperous new ones the better form of this is seen in the patronage accorded to the arts and sciences, and in this country the exceptional development of horticulture has been entirely due to the same cause. In the United States of North America the increase of capital has also resulted in a wonderful advance in horticulture, and it seems that our cousins are surpassing us in real gardening enthusiasm as they already have in some other matters. Is it, therefore, surprising that a share of the attention of the wealthy should be devoted to plants, and amongst them especially to Orchids? In provincial gardens the first requirements are good supplies of fruit and vegetables, then come the plants, and in not a few establishments where decoration is largely carried out this is now a highly important department. Around large towns it often happens that fruit and vegetables can be purchased more cheaply than they can be grown in gardens, and then the owner delights himself with his Roses, Chrysanthemums, hardy plants, or Orchids, according to the length of his purse and his own partialities ; or perhaps he is a man of large sympathies, and then they all come in for a share of his regard. It consequently happens that suburban gardens abound in examples of good plant culture, while for general "all-round" establishments we must usually go to the provinces. In the former gardens we find the greatest extension of Orchid culture in recent years, successful merchants and "City men" have taken them in hand as their especial favourites, and collections have multiplied with surprising rapidity. Regarding Orchids simply as luxuries there have been substantial reasons for this popularity, as no thoughtful person with the smallest capacity for appreciation of the beautiful in Nature could fail to admire their strangely handsome flowers, singular formation, varied and rich colours. A more intimate acquaintance with and extended knowledge of them invariably develope that admiration into a kind of enthusiasm such as distinguishes all true horticulturists, and which some petrified persons, wrongly named utilitarians, are incapable

of experiencing. The man who has no love for flowers or music, or who does not feel a thrill of satisfaction and an exaltation of the mind in contemplating a beautiful landscape, is a near approach to a soul-less creature.

But Orchids are more than mere luxuries, for they comprise some of the most useful plants that can be grown for durability of their flowers and decorative value. Take, for instance, such an old favourite as Dendrobium nobile, which stands unrivalled for beauty of flowers, floriferousness, and ease of culture. Another old inhabitant of our houses, Cypripedium insigne, the flowers of which will last for weeks when cut, is a similar example. The graceful Calanthes of the Veitchi and vestita types are almost indispensable, together with the lovely Lælia autumnalis and L. anceps for winter use, while Lycaste Skinneri and a host of grand Cattleyas furnish floral charms that cannot be overrated. Some of the crimson coloured Cattleyas are now great favourites for table decoration, as under artificial light their marvellous colours are seen to perfection, possessing a richness that is quite unique in the floral world. For bouquets and buttonholes the exquisite Odontoglossum of the crispum type are general favourites, and the supplies of these now sent into the London flower market would have been considered extraordinary a few years ago. When market growers take a plant in hand it is certain that no fantastical qualities have caused them to do so, but it affords a proof that a demand exists which is difficult to satisfy. There are now hundreds of houses devoted to Odontoglossums, and in some extensive nurseries they may be seen in hundreds of thousands planted out in the side beds and watered with a hose, like bedding plants.

This brings us to another part of the subject, which deserves a few observations—namely,

ORCHID GROWING.

Whenever plants of any kind have just come into notice there has always been a tendency to exaggerate the difficulties attending their culture, and if one or two people become fairly successful they attained a proportionate degree of fame.

In what might be termed the early days of modern horticulture there was not the same readiness to communicate for the general good the experience thus gained as there is as at the present time. Cultural secrets were often guarded as jealously as possible, and, as in a few very rare instances, they are even now. Happily, however, the horticultural press has assisted in dissipating such prejudices, and encouraging a true freemasonry amongst gardeners. Until quite recently the culture of Orchids was regarded as of exceptional difficulty, but many have helped to prove that such ideas are completely erroneous, and the only danger now is that growers may go to the opposite extreme and become careless.

The chief key to successful Orchid growing is close, thoughtful observation, and the same key will be found an exceedingly useful one in every department of the gardener's art whatever a man's experience or position may be. General rules can be readily furnished, but the success or failure of their application must depend upon individual experience, which will modify them according to the varying circumstances under which they may have to practise. I am familiar with many examples of able cultivators who have made considerable fame in one garden by their successful productions, but who, when removing to other localities have for a time completely failed in the culture of the plants they had made a special study, until they had become accustomed to the peculiarities of their new situation. In a somewhat similar way we find an Orchid or some other choice plant thriving in one garden, while perhaps in a neighbouring place it is never satisfactory. Even in the same establishment and in one house there are certain situations which seem to suit some plants better than others, and which can only be discovered by a man who takes a sincere interest in his work, and who watches his charges closely.

An instance of this is afforded by the lovely Vanda cœrulea which is found in many gardens, but too seldom in its best condition, and as the result of his large experience Mr. B. S. Williams says that it is most strange in its likings and dislikings, sometimes succeeding in a warm house sometimes in a cool one, and the only way when a place is found that appears to meet its requirements is to let it remain there.

We often wish that collectors and travellers who have such exceptional advantages for noting the local surroundings of Orchids in their native habitats would favour us with more particulars than they do. This could easily be accomplished without betraying the exact whereabouts to rival trade collectors, and it would be an immense assistance to cultivators at home, who often have to sacrifice some of their plants in experimental search for the right conditions to provide.

In his most entertaining book of travels, "The Himalayan Journals," Sir Joseph Hooker has given a very interesting reference to the plant just noted—viz., Vanda cœrulea, which is worth repeating. It is as follows:—"Near the village of Lernai Oak woods are passed in which Vanda cœrulea grows in profusion, waving its panicles of azure flowers in the wind. As this beautiful Orchid is at present attracting great attention from its high price, beauty, and difficulty of culture, I shall point out how totally at variance with its native habits is the cultivation thought necessary for it in England. The dry grassy hills which it inhabits are elevated 3000 to 4000 feet: the trees are small, gnarled, and very sparingly leafy, so that the Vanda which grows on their limbs is fully exposed to sun, rain, and wind. There is no moss or lichen on the branches with the Vanda, whose roots sprawl over the dry rough bark. The atmosphere is on the whole humid, and extremely so during the rains; but there is no damp heat nor stagnation of the air, and at the flowering season the temperature ranges between 60° and 80°. There is much sunshine, and both air and bark are dry during the day. In July and August during the rains the temperature is a little higher than above, but in winter it falls much lower, and hoar frost forms on the ground. Now this winter's cold, summer's heat, and autumn's drought, and, above all, this constant free exposure to fresh air and the winds of heaven, are what of all things we avoid exposing our Orchids to in England: it is under these conditions, however, that all the finer Orchideæ grow."

One evident requirement of Vanda cœrulea is plenty of light, and Mr. J. Godseff, who has lately been travelling in the United States for Messrs. Sander & Co., tells me that he saw some hundreds of plants of this Vanda in the house at Mr. W. S. Kimball's establishment, Rochester, New York, with a profusion of fine blue flowers such as are never seen in this country. Under a clearer sky the colours of most Orchid flowers are much more intense than here, and this is seen even in Belgium, and some well-known varieties or hybrids would be scarcely recognised as seen there, so much richer do the colours become. These facts point to the necessity of admitting all the light possible to plants grown in our thick atmosphere, but even this has led to extremes and bad results.

Diffused light is what is required, and shading cannot be altogether dispensed with in the summer under any circumstances. Of course most Odontoglossums and other cool house Orchids always require protection from the direct rays of powerful sun, but some experiments have been tried with Cattleyas and other tropical Orchids that have been rather discouraging to growers. I remember visiting a private collection of Orchids in the north of England a few years ago which contained some remarkably fine Cattleyas and Lælias with leaves almost as hard as leather, of a dark bronzy green colour in some cases. The plants were exposed to an unusually free ventilation, and were very rarely shaded, indeed I believe for some time it was dispensed with altogether. The plants flowered in an astonishing manner, and during several seasons they came under my observation were extraordinary in that respect, but a short time afterwards they were sold, passing into the hands of several growers, and in my wanderings I have found them in widely separated gardens both north and south. All alike had found they were seriously defective in the number of roots, and some have since collapsed even under the best management. This rootless condition might be attributed to several circumstances, but the most probable seems to be that the continual exposure to bright sun, combined with a very free ventilation, had necessitated such frequent and excessive supplies of water that the roots had been gradually destroyed. It seems strange to talk about giving an Orchid too much water, but it can be done under such conditions, and it is an atmosphere regularly charged with moisture that is chiefly required to meet the demands of the plants in the hottest weather, rather than frequently deluging the roots in the pots with water. Ventilation in suitable situations might be much more liberally provided than is usually the case with advantage, and a little morning and evening sun is beneficial also, but the results I have seen do not encourage the adoption of a general system of non-shading.

In the flowering of Orchids, which is apparently so greatly encouraged for a time under the system already described, there is also another point worth consideration. It is an extremely weakening process, and small plants of anything choice should not be allowed to retain their flowers long, nor to expand many, or they are apt to terminate their existence rather abruptly, and it is not agreeable to see a few £5 or £10 notes vanish in this way. Phalænopses in particular are very liable to flower abundantly for a year or two, which the delighted owner regards as a convincing proof of his cultural skill, and then they sink into a rapid decline, or dwindle for several years before they recover. The fogs which play such havoc in town and suburban gardens save the lives of many weakling Phalænopses by destroying the flowers which their owner cannot bring himself to voluntarily sacrifice. But with many Orchids the flowers last nearly as long when cut and placed in water as when remaining on the plants, and there is then no excuse for allowing them to suffer. There is another part of the subject to which I wish to devote a few remarks—*i.e.*,

ORCHID GROWERS.

A week or two ago a writer contributed to one of the gardening papers a letter containing an expression that is very much like a deliberate slander. Referring to the constitution of the Floral Committee, he remarks concerning the orchidists that "the bulk of these know little and care less about other flowers." Either this writer knows very few orchidists, or his mind is clouded with very dense prejudice, and strangely enough in the same letter he pays a well deserved compliment to one of the best examples that could be adduced in controverting his statement—viz., Mr. James Douglas. I have a wide circle of Orchid-growing friends and acquaintances, and respecting nine-tenths of them that assertion is absolutely without foundation. There has always been an ignorant prejudice against specialists of all kinds, and it is only the advancing knowledge of the present time, with the corresponding development of wider views that is dissipating this. Young men would do well to remember the aphorism, "Know something of everything and everything of something." It is advantageous, indeed essential, to have as wide a general knowledge as possible, but to give any man a chance of excelling in these days he must descend to the minute details in some one study or branch of his business and become a specialist. This is necessary, not only for individuals, but for the benefit of society, as it requires a life's study to master any particular subject now; the accumulated knowledge of centuries has often to be analysed before a

student can do much as an original investigator. In horticulture we have abundant examples of specialists who are also first-rate "all round" gardeners, and a few visits to the gardens managed by such men would be sufficient to remove the antiquated prejudices that some people possess. Mr. E. Molyneux, for instance, has made his fame as a Chrysanthemum grower, but all who have visited Swanmore Park or seen his vegetable, fruit, and plant exhibits at shows can testify to his abilities as a thoroughly practical cultivator. Mr. J. Douglas is another example of a similar kind. As already noted, he has long made a special study of Orchids, but after an hour or two in the Great Gearies Gardens a visitor would think that their superintendent made a specialty of everything under his charge. The same could be said of many gardeners who have made specialties of fruit or vegetables, such as Mr. McIndoe, Mr. Hunter, Mr. Goodacre, Mr. Woodbridge, and scores of others who are very far from being one-idea men.

Even amongst amateurs themselves, who might naturally be expected to be more entirely devoted to particular hobbies, plenty of instances could be given of gentlemen, and ladies too, who, while selecting one class of plants for an especial share of their attention, have yet an extended interest in plants generally. Baron Schröder is well known as a distinguished amateur orchidist, but he is almost as partial to his Rhododendrons and other outdoor plants, and he knows them as well.

My experience is that the men who are contented with mediocrity in everything are not the men with the largest minds, nor do they, as a rule, attain to the best situations. It must not be thought that I advocate all young gardeners becoming orchidists, but if a young man has a partiality for any one branch of his business let him give his best attention to it, while not neglecting the other essential parts, and the probability is that he will excel. He, however, is a happy man who is prepared to adapt his specialty to the varying requirements of the circumstances by which he may be surrounded in different situations. The fact is that the additional exertion needed to master any subject must invariably have a beneficial effect on the mental powers generally, for the mind requires training and developing as much as the body. Rest assured that when the acquirement of knowledge and self-improvement by working, reading, and thinking is earnestly regarded as a duty by young men, they will soon find that it also constitutes one of the chief pleasures of life.

FLOWERING BOUVARDIAS WITHOUT ARTIFICIAL HEAT.

THAT Bouvardias are accommodating plants as well as being very choice when cut flowers are in great demand admits of no doubt, but when a good supply of flowers can be had without the aid of artificial heat to flower the plants in, Bouvardias are doubly valuable, particularly to those who do not possess a large amount of glass room. The large-flowered white variety, Humboldti corymbiflora, produces an abundance of fragrant flowers during September and October, when other flowers are becoming scarce ; add to this the bright scarlet variety elegans and the delicate pink of Vreelandi, and you have varieties sufficient for an early supply of these useful flowers. The next question which suggests itself is, Where are these plants to be flowered without heat ?

If plants of these varieties are on hand, having flowered last season, these should be at once cut down to two or three eyes if the plants are young, otherwise cut to one eye if the stock plants are old ones and freely furnished with branches. A vinery or Peach house just started is a capital place for them, as the moisture and daily syringings assist the Bouvardias to break freely into growth, or failing these a Cucumber or Melon house will suffice. To increase the number of plants cuttings should be inserted singly in small pots when procurable, those about 2 inches long taken off with a heel answer best. A brisk bottom heat and the protection of handlights or a propagating frame are the best means of procuring quickly struck plants. The soil best suited is equal parts of peat, loam, and leaf soil, with a liberal use of sharp silver sand. When roots are formed and growth commences ventilate gradually, as the plants are liable to flag if exposed suddenly to the air. Remove them when ready to a shelf or position close to the glass in a temperature not less than 60° by night, with a rise of 10° during the day. When the plants are 4 inches high pinch out the point of the leader to induce the formation of side shoots, and shift the plants into larger pots as required. Gradually harden them until they can be placed in cold frames toward the end of April. The stock plants should be shaken out of the old soil just before growth commences, replacing them in pots into which the roots will go comfortably, using soil composed of two parts peat, one of leaf soil, and one of loam, with a dash of finely ground bones and some sand. Pinch the points out of each shoot when 2 inches long. Harden them similarly to the younger plants.

The next consideration is the position they are to occupy during the summer, and to flower in later on. We plant ours in pits following a crop of Potatoes, by levelling the soil which contains a plentiful supply of decayed leaves ; adding a small portion of peat and some bone dust we get a compost which suits them well, and they grow vigorously and flower freely. Much depends upon the growth made by the white variety for the future flowering. The stronger the growth in reason the finer the trusses. Plant sufficiently low in the pit to allow of a free growth, so that the points of the shoots will not rub against the glass, or they are more liable to be destroyed by early frost in October, this is why pits are better than cold frames. The middle or end of May is a good time to plant them, allowing sufficient space between them, and as the current year's plants will not make more than half a dozen shoots from the bottom this will guide the planter as to the distance. The growths should not be topped more than twice, or succeeding growths will not be so strong. Keep the pit nearly close for a few days until new roots are formed, and shade from bright sun until growth is fairly started. Admit air gradually as growth advances until the lights can be removed. Give the plants a vigorous syringing every afternoon ; supply water freely to the roots, which may be supplemented when the flower buds appear by liquid manure not too strong. If black aphides attack the points of the shoots, as they sometimes do, dust the parts affected with tobacco powder in the afternoon, and syringe off in the morning. Repeat this in a day or two until the plants are clean. Towards the end of August place on the lights, giving abundance of air, gradually reducing it as the flowers expand and the nights grow colder. Towards the end of September cover the lights with mats to protect from early frosts. The centre or extreme point of each branch will produce the first blossoms. If care be exercised in cutting the blooms side growths will be produced freely, which will in turn flower abundantly. By this treatment of the plants in pits of this character we have been able to cut flowers freely until the middle of November in a mild autumn.—E. MOLYNEUX.

OUR NATIVE FERNS.

I WISH to say a few words on the above plants, and I for one am much obliged to those friends who have been the means of reminding the lovers of Nature's beauty that there are in the British Isles plants of such beauty, and we have them in such variety that they appear as if intended to suit all tastes. The distinct varieties may be counted by hundreds, and I believe I am within the bounds of truth in asserting that no other country with only nineteen genera of Ferns and only forty-three species possesses so many distinct varieties as the British Isles. Yet these beauties of our native land seem to be far from attracting that share of attention they ought, and in our estimation deserve to do. No doubt there are some reasons for this, and I am rather inclined to think one is to be found in the non-appearance month after month of any reference to them or their merits in such journals as yours and others. We see one or two advertisements, but seldom a word to commend them to the public. I hope you will pardon me if I suggest that a short paragraph in your valuable paper two or three times a year would not be out of place, and no doubt would be acceptable to many of your friends. I can speak for myself that the first thing I look for in the Journal, or any other horticultural paper, are the Fern notes. I was much pleased recently to learn that a bequest has been made to the Royal Gardens at Kew. A gentleman at Usk bequeathed 4000 British Ferns, representing over 1000 named forms, so that those who have the opportunity of visiting those gardens will have the gratification of seeing and judging for themselves the merits of our native Ferns.

I will now refer to several other causes which I think have helped to put our native pets in the shade of late. Mr. F. W. Stansfield says some years ago classes specially for British Ferns were not uncommon in exhibition schedules ; but these are in many schedules now supplanted by the extremely indefinite hardy Ferns, a term so vague that disputes as to its meaning are as common as exhibitions, and I endorse Mr. Stansfield's opinions. But they suggest something further to my mind. I would ask, How much has bad judging had to do with the present way of scheduling Ferns ? for I can assert from my own experience that that few who are called in to judge in these parts know the difference between hardy exotic and British Ferns, and this explains to my mind the reason for schedules being altered to hardy instead of British Ferns and exotics. Then again, supposing there are twelve plants staged as hardy, and half of them are exotic, how many judges are there who could tell whether the exotic plants were hardy or half-hardy? I rather fancy, if put to the test, they would be found wanting. I would suggest that such a state of things ought to be altered, so that the public may know when they are looking at a class of plants whether they are British or foreign, and I believe by so doing we should increase the knowledge and love of our native Ferns in no small measure.—J. EADON, *Heeley, Sheffield.*

UNDER GARDENERS AND EXHIBITORS.

I HAVE read Mr. R. Weller's letter with great interest and pleasure, and beg to assure him that it is a matter of great regret to me that I am unable to look at this subject through his eyes. He will, I know, excuse me when he reflects that dulness of vision was a characteristic infirmity of an illustrious namesake of his own—the immortal Sam of Pickwickian fame. I am, however, shocked and grieved to find that I, an obscure under gardener, am classed by Mr. R. Weller with professional agitators. Alas! in the words of the great poet, "To what base uses do we come at last!"—AN UNDER GARDENER.

As your correspondent, Mr. R. Weller, states, "Under Gardener" certainly does put the dark side uppermost, and perhaps goes a little too far in his opinion of head gardeners, but at the same time I believe that many young men really have cause to grumble a little at the way they are treated. Perhaps "Under Gardener" is one of the unlucky ones, but I believe that many head gardeners are very kind to their young men, and when such is the case there is much more encouragement for

a young man to do his best, and even if he does do a little extra without getting paid for it he ought not to grumble. I have only been in one place where plants were grown for exhibition, and in that I found it something similar to what is spoken of by "Under Gardener." Upon two occasions we have had to change our clothes and set to work on Sunday afternoon, about 4 o'clock P.M., and keep at work till about 10 P.M., then be up again by 4 A.M., and not be able to go to bed again till about midnight. For this we received nothing, but I should have been very well satisfied if, after doing my best and seeing my companions do the same, I could only have seen that the gardener was pleased with us; but this was not the case, for if only a leaf was out of place it was an opening for fault-finding, and on one occasion he went so far as to say that we did all we could to hinder him from getting prizes. I can assure you that this was far from being the truth, for it used to be a matter of competition between the three of us in the bothy to see which could get up his plants the best and secure the most prizes in our several departments. The shows were all within a reasonable distance, and I am well aware that the prizes left £3 to £5 clear when everything was paid. I do not wish to say that that is the case with all, for there are not a few instances where the prize money comes a long way short of the expense, and then I think it would be very unreasonable of young men to get anything even for overtime; but I do think that in cases where anything is cleared, the young men should be paid for their overtime, and receive some encouragement for their exertions, if only a pleasant word of recognition. The gardener we all know is responsible for everything in the garden, and has to work his brains very hard to please, but if the young men did not also work their brains as well as their hands in doing their best to aid him, he would come far short when the day of the exhibition arrived, anyway this is the belief of—A FOREMAN.



THE NATIONAL SOCIETY'S PROPOSED PROVINCIAL SHOW.

A DESIRE has been expressed by several northern growers that the National Chrysanthemum Society should hold a provincial Exhibition this year, and the idea has been favourably received. Suggestions from exhibitors and the secretaries of societies in the north of England, indicating the encouragement that may be expected, would however be useful in furthering a consideration of the matter, and any communications forwarded to me, addressed to this office, will be brought before the Committee.—L. CASTLE.

SHOWING—OWNERS' CLAIMS.

I VERY much dislike to enter a controversy under the protection of a *nom de plume*, and I think I have only once before done so, and then it was not assumed for the purpose of sheltering myself, but to prevent the possible identity of another person whose private actions were made the subject of public discussion, but as "Wraith" has adopted a *nom de plume* I will follow his example. If "Wraith" will disclose his identity I will do the same, because I think the proper names of the writers are the best proof of good faith in controversies, but are not necessarily require to ordinary articles.

"Wraith" enters the list as a champion of employers, and suggests if gardeners' names must appear in reports of horticultural shows they should be given in this way—"Twenty-four Chrysanthemums, incurved. distinct.—First, A. Blank, Esq. (gardener, Hobbs)." That is, we are told, as it ought to be, and gardeners must know their places. I fear you, Mr. Editor, are not entirely free from blame in this matter, for it has been stated in leading articles that in the ranks of gardeners are to be found men of considerable education, men of refinement, men of great business capacity; and on page 1, January 5th, 1888, are these words—"Some of the most intellectual of gardeners are the most energetic workers, and the best painters amongst them are at the same time well in the forefront amongst the most successful Grape-growers and general cultivators of the generation." Surely there is a mistake somewhere. Men such as you describe are surely entitled to the usual courteous prefix of Mr. when mentioned in print. Perhaps it may be well not to dwell long on "jockeys," who, as "Wraith" perhaps knows, do not hob-nob with the rich and the great, do not receive high retaining fees, or handsome presents into the bargain if they win, so we return to the gardeners. In the future their names must not appear. Reports of shows will then stand thus—"Plate of Onions.—First the Duke of Ramsgate, the Onions were well grown with very thin necks, and His Grace must have been most assiduous in pinching them. Celery, two sticks.—First the Marquis of Willerford, this was of excellent quality and showed careful management on the part of his Lordship in the earthing-up process. One Red Cabbage.—First Ephraim Snooks, Esq., this was the largest specimen we have seen, Mr. Snooks must have bestowed a considerable amount of labour and time in the application of liquid manure, which, we fear, he would at times find somewhat offensive."—PHANTOM.

CHRYSANTHEMUM PROPAGATION.

NOTHING succeeds like success, and in the propagation of Chrysanthemums, whatever method may be adopted, if the end is thoroughly satisfactory, we are quite justified in pursuing that course which has led to those results. In a recent issue of the Journal, on page 41, I notice "W. K. W." writing of Mr. Billson's garden near Leicester, speaks of the Chrysanthemum cuttings being struck in a cold vinery and were flagging "seriously." It must be gathered from this remark that "W. K. W." is no believer in this system of propagation, and I know he is supported in this view, perhaps, by the majority of cultivators. This would appear sufficient evidence to at once condemn the practice; nevertheless, that this cold and prolonged system of propagation has its advantages I am quite convinced. The excellent blooms obtained by Mr. Billson is sufficient proof that the flagging was not "serious," and quite justified Mr. Bolton—I beg "Wraith's" pardon, Mr. Billson—in persisting in a course which has led to such good results. Our own cuttings have been struck in a somewhat similar way for several years past. Ten or a dozen cuttings are placed in a pot, and then stood on a ledge in the front of an orchard house, from which frost can be excluded by hot-water pipes. On all occasions, except when frost prevails, the ventilators and doors are thrown open, and as a consequence of such extreme exposure the cuttings flag considerably; but on dry or sunny days they are sprinkled with the syringe, no fear being entertained of damping in this airy structure. Very slowly but surely do they form roots, after which they seem to grow away with a freedom and sturdiness which could not be surpassed by plants which had been struck in a close or warm atmosphere. Again, the small space occupied by the cuttings for two months or more, and the little labour attached, must be advantageous to the amateur, and also the gardener with limited assistance. I should state, however, that I insert the bulk of our cuttings from the 4th to the 20th of December, any that are compelled to be inserted towards the end of January or in February are placed in heat.—A. R. COX.

SWEET-SCENTED CHRYSANTHEMUMS.

THAT sweet-scented varieties of Chrysanthemums will form an interesting class when their numbers increase admits of no doubt. Taking the family of Chrysanthemums generally the odour emitted from both the leaves and the flowers is anything but pleasant, in fact most people consider them disagreeable. It is not generally known that some possess a fragrance similar to Violets, which is much appreciated. In my opinion the fragrance of the single pale pink variety, Mrs. Langtry, is much more pronounced and agreeable than that from any other variety. One or two plants of this will perfume a whole house if the plants are grown in "bush" fashion, so that numbers of blossoms are developed at the same time. At present I do not know more than four varieties which are scented. Now that they are being taken in hand more generally for cultivation, and as prizes are being offered specially for this class, we may expect shortly to see more varieties added to the number. I will describe the sorts I know to be fragrant.

Progne, a small flowered, rather tall-growing variety of the reflexed type when cultivated in the manner generally adopted for the growth of large blooms, the colour is amaranth and scented like Violets. Dr. Sharpe, also reflexed, magenta colour. Little or no scent is emitted from flowers of this variety, which are produced from crown buds, and are consequently large and oft ntimes early; even if they have any it does not last long, but when grown with a view to produce a number of blossoms on each plant, as this variety readily does, the scent is much more pronounced. The single variety, Mrs. Langtry, already referred to, is dwarf in habit of growth, branching freely and flowering abundantly the whole length of t e stems. Dick Turpin, Anemone Pompon, has brightly coloured ray florets and deep yellow scented flowers, highly perfumed, dwarf and stocky in growth; this variety succeeds well grown either in pots or planted at the base of a south wall; in the latter position its blossoms last a long time in perfection.

A few cultural notes will perhaps be useful to some. Cuttings should be inserted at once, choosing stout suckers, either singly or two in a 3-inch pot. When the plants are 4 inches high pinch out the point of each to induce side branches. Select about three of the strongest of these, removing any others. When those retained have grown from 4 to 6 inches long pinch out the points again. From these new breaks select six of the strongest shoots. After stopping the shoots no other pinching will be needed. These may be allowed to grow, and will in time produce a plentiful supply of flowers. The two reflexed varieties should have some of the weakest growing branches removed from the lower part of the main stems. Thinning the flower buds also will induce a fuller development of the flowers, but in the case of the single variety and the Anemone Pompon, all branches proceeding from these after the six branches are selected should be allowed to grow and all bloom buds develope. The colour of Dr. Sharpe and Progne will be richer if later produced flower buds are retained for flowering. The soil used for potting should not be too rich, nor the pots too large where space is a consideration. Mrs. Langtry and Dick Turpin may be grown two plants of each variety in one pot. The pots at each potting should be a trifle larger, say 4 inches, 6 inches, and 9 inches in diameter. —E. MOLYNEUX.

SPORT FROM MRS. C. CAREY.

MESSRS. H. CANNELL & SONS, Swanley, send us flowers of a bright yellow sport from Mrs. C. Carey with flat florets of a very clear and

pleasing tint. In the style of the flower it is suggestive of the variety from which it has been obtained.

CHRYSANTHEMUM FLORETS.

In reply to Mr. Shoesmith's remark, page 52, respecting an error in my article on page 464 last vol., it may be explained that what I had intended to say was that I had noticed an unusual number of sced or tubular florets in incurved blooms this season. This is of course an approach to the single condition, and it will probably make the matter clear to your correspondent.—E. Molyneux.

HULL AND EAST RIDING CHRYSANTHEMUM SOCIETY.

The annual general meeting of the members of this Society was held at the "Station Hotel" on Friday evening, 27th January. Mr. R. Falconer Jameson (Chairman) occupied the chair, and there were about forty members present.

After the minutes of the last meeting had been adopted, the annual report was presented. The balance sheet showed that the total receipts of the year had been £681 14s. 1d., including £30 8s. 5d. balance in the bank at the beginning of the year on the current account, and £200 on the cash deposit account. At the close of the year the current account showed a balance in hand of £29 13s. 4d., and a deposit of £150. The amount of members' subscriptions was £110 8s., and the amount given by the Society in prizes was £178 9s. 6d. The Chairman proposed the adoption of the report and balance sheet, and Mr. Bohn, in seconding this, said that the £50 which they had spent over and above their income this year was, to a large extent, accounted for by the annexe to the Artillery Barracks, which they erected for providing extra accommodation for the public at their annual Show. The fact that they had not so many visitors at their Show was accounted for by the other attractions that there were in Hull. The quality of the flowers, however, was far superior to that of the previous year. He hoped that next year they would have flowers equally as good, and that they would be able to show them a more favourable balance sheet.

The election of officers was next proceeded with. Mr. C. Judge proposed and Mr. E. Harland seconded the re-election of the Chairman (Mr. R. F. Jameson), which was carried. Captain Brodrick, Mr. Geo. Bohn, Mr. A. W. Stanley, and Mr. J. Hornsey (Chairman of the Hull Amateur Floral and Horticultural Society) were appointed Vice-Presidents. Messrs. C. Judge and R. W. Judge were re-appointed Hon. Treasurers, Messrs. E. Harland and J. Dixon were re-elected Hon. Secretaries, and Messrs. T. G. Milner and James Abercromby as Auditors. The following gentlemen were voted to form the Committee:—Messrs. F. W. Jameson, E. T. Sharp, E. Goddard, W. S. Brodrick, W. Wheatley, J. H. Fisher, W. W. Cogan, H. Robinson, F. W. Holder, O. Hillerns, Cottam, and Captain Wellsted. A vote of thanks to Mr. R. F. Jameson for presiding concluded the proceedings.

The annual report stated that the Show was visited by 9000 persons, who, by a well-arranged system of circulation, were accommodated without any inconvenient crowding. Some considerable cost was incurred by providing an annexe to the Artillery Barracks, so as to give more room for the Show, but this extra cost was, unfortunately, not recouped to the Society by the extra number of visitors who came, and, unless a large increase of annual subscriptions is made, the Committee cannot recommend their successors to incur the expense of a similar building for the next Show. There was a great advance in the general excellence of the exhibits in the local classes, showing that the Society is fulfilling the object for which it was formed—viz., to encourage and promote the cultivation of the Chrysanthemum in this district.

CHRYSANTHEMUM MDLLE. CABROL.

This in my experience is one of the best of all for producing late blooms, and I do not know any variety of which the blooms remain fresh and good upon the plants for so long a time after opening as this. I had good blooms of it opened in the latter half of November which were cut beautifully bright and fresh the first week in January, and some on later plants opened second week in January are now very beautiful, and would, I believe, last throughout February. It is one of the most beautiful of the new class of Japanese Anemones, and as a cut flower for table decoration is, I think, unsurpassed by any owing to its extreme lightness and elegance.—W. K. W.

PORTSMOUTH CHRYSANTHEMUM SOCIETY.

We understand the above Society is preparing a schedule in which prizes to the value of £200 will be offered, in addition to a cup value £25. A three-days show will be held—namely, on November 7th, 8th, and 9th. From the balance sheet for the past year it appears that there is a favourable balance of over £120, and that upwards of 8000 persons paid for admission in three hours on one day when the charge was 1d.

JAPANESE CHRYSANTHEMUMS FOR EXHIBITION.

Would any grower kindly name the best nine large Japanese for exhibition?—An Anxious Inquirer, *Carlyon*.

CHRYSANTHEMUMS AT STONELEIGH.

In my notes at page 41 on the Chrysanthemums grown during the past season at the above address a mistake occurs in the middle of the second paragraph which alters the meaning. It is stated that the varieties Eve and Mabel Ward had been allowed to grow unstopped until the formation of the first or July bud, the three breaks immediately below this being taken on for producing crown buds. What I should have said was that all the varieties grown were treated as recommended by Mr. Molyneux, except only those two varieties, which were stopped early to induce early breaks. In the fourth paragraph of the same notes, speaking of Roses, my remark on the healthy bushes of "Teas" in pots reads healthy "bunches."—W. K. W.

CHRYSANTHEMUM CULTURE.

[A paper read by Mr. Edwin Beckett, gardener to H. H. Gibbs, Esq., Aldenham House, Elstree, before the last monthly meeting of the St. Albans' Horticultural Society.]

(*Continued from page 52.*)

I would draw some attention to the dwarfing or cutting-down system which in some localities is practised rather largely, and for some purposes is useful, especially where dwarf plants are desirable; but from my own experience I do not advocate it, for the reason that the blooms lack depth and finish. When practised the plants should be grown on in the usual way until the commencement of June, then cut back to within 4 inches of the pot; after this keep them moderately dry until they begin to break, thin out the shoots, leaving three or four of the strongest, and treat in the usual way.

In the production of dwarf-trained specimens the principal points to be aimed at are fine quality flowers, good foliage, and neat training. Strong plants should be selected early in February. Place them near the glass in a moderate temperature. When about 6 inches high pinch out the points, shifting into 6-inch pots as they commence growth to break, still keeping them in the same temperature. When becoming established remove them to a cold frame. When the shoots are long enough training should be commenced; fix a wire under the rim of the pot, gently pulling down the shoots until they are in the required position. Admit air on all favourable occasions, syringe the plants early in the afternoon as required, transfer them into 8-inch pots, tying down the shoots as before, hardening the plants so as to fit them to stand out of doors early in May, selecting a sheltered but light position, and if the weather be frosty they must be protected by light canvas. The second week in June they should be shifted finally into 12-inch pots. Stand them on slates a good distance apart. A wire hoop painted green placed round them 6 inches from the pot is the best means of training the shoots; on all fine days syringe in the morning and again in the evening. Stopping the shoots should be discontinued by the first week in July, or poor flowers will be the result if left later. They should be placed under glass about the same period as previously mentioned, also being staked before the flowers are too far expanded. Willow sticks painted green may be used, as they are light and of neat appearance, a point always to be aimed at. Weak liquid manure in all stages of growth will greatly assist these, increasing the strength as the pots become filled with roots. The above remarks in all cases apply to the large flowering sections—viz., incurved, Japanese, and reflexed. Anemone-flowered and Pompons for fine flower are best struck in February, and stopped once or twice during the spring. Disbudding must not be practised to such a large extent as in the case of large-flowering sorts, but a moderate thinning will always repay.

Many kinds of liquid manure have been advised, but I have found none to suit them so well as the following:—In a large tub or cistern place one bushel of soot tied securely in a thin bag, one harrowful each of cow and horse manure, fill with soft water, stir the whole before using and strain through a half-inch mesh sieve, dilute to the colour of weak tea, and recharge when the strength becomes exhausted. Occasionally give the plants a change of guano water or Wood & Sons' universal liquid manure powder; this is undoubtedly a first-class stimulant both for foliage and flowers. The two latter must be applied with great care and discretion or damage may be done.

The diseases and enemies of the Chrysanthemum in some seasons are very numerous, and the past season has been by no means an exception. I have always noticed there are more blind and deformed buds after a long spell of hot dry weather, and mildew is sure to make its appearance, notably so on some varieties more than others. As a preventive dust occasionally with flowers of sulphur. When in a young state the common green aphis is often very troublesome, attacking the points of the plants. Strong tobacco water is the safest and best remedy, dipping the plant thoroughly, syringing two hours after with soft warm water. Earwigs are also troublesome pests from the time the buds are forming until the flowers expand, doing great damage to the florets as they unfold; these must be watched for night and morning. Bean stalks cut in lengths of about 6 inches make capital traps placed among the plants and blown into a pail of hot water every morning. The earwigs are easily dislodged; I have seen as many as a dozen blown from one stalk. Another insect, commonly known as the jumper, does a lot of mischief to the young points and buds. I know of no remedy for this except killing with the thumb and finger. But the most destructive of all that I have met with is an insect which in its young state resembles black aphis, becoming a light green, and at this stage travels round the shoots very rapidly when disturbed, and when full developed turns to a soft brown fly, which must be caught and killed. Dust the points occasionally with tobacco powder during the season.

This concludes my short treatise on the Chrysanthemum. There are so many classes and different methods of growing it would be quite impossible to go further into details.



FRUIT FORCING.

FIGS.—*Earliest Trees in Pots.*—The trees started in November for affording ripe Figs early in May will be throwing out fresh roots plentifully, the bottom heat being kept steady at about 70° to 75°. Bring up the fermenting materials to the rim of the pots, and instead of allowing the roots to come over the top of the pots to ramble unchecked into the fermenting material, place pieces of rich turf of good size round the rims to keep the roots near home and to induce sturdier growth. Maintain a good moisture in the atmosphere by syringing twice a day and damping as may be required in bright weather. Admit a little air at 70°, increasing it with the temperature; close at 75°, and if the temperature rise to 80° or 85° from sun heat it will be an advantage. See that there is no lack of water at the roots. The drainage being good there is little danger of giving Figs too much water, many crops being lost by the soil being kept too dry. The temperature in dull weather must be kept at 60° to 65°, 55° to 60° at night when the external air is cold, but 5° higher when the weather is mild. Disbudding will need to be attended to as growth advances and gross shoots stopped, but the finest Figs are borne upon extensions.

Early Forced Planted-out Trees.—The trees planted out in inside borders and started early in the year will, if the borders have had repeated waterings at a temperature of 85°, be starting into growth, and may have the night temperature to 55°, 60° to 65° by day from fire heat, with an advance from sun heat and free ventilation to 70°, or even 75°. Syringe twice a day as before advised, and see that the borders are thoroughly moistened. If the trees are weak a thorough soaking with liquid manure, not too strong, at a temperature of 85° to 90°, will assist the growth.

VINES.—*Eyes and Cut-backs.*—Eyes may now be inserted, using pots pans, or square pieces of turf. Select firm well ripened wood, filling the pot or pan with rich friable loam, inserting the buds with a pinch of silver sand half an inch beneath the surface, plunging the pots, &c., in a bottom heat of 80°. Cut-backs should be placed in a house where they will have a temperature of 60° to 65° at night, and 70° to 75° by day. When they have started into growth shake them out and return them to the same size of pot, using good friable loam, and give a moist and rather close atmosphere until re-established, when they should have a position near to the glass, so as to insure sturdy, short-jointed thoroughly solidified growth.

PINES.—Fruiting plants and starters, which will now be throwing up fruit, should have a mean temperature of 70°, varying it 5° according to the weather, admitting air at 80° with sunshine, but not lowering the temperature, allowing it to rise to 85°, closing between that and 80°, and if it rise somewhat after closing it will be advantageous rather than otherwise. The plants recently started into fruit will, if in good condition at the roots, produce strong suckers. When the suckers are large enough to handle, all except one to each plant must have the growth checked by taking out the centre. To supplement the autumn potted plants select others which have been wintered in 7 or 8 inch pots, choosing the most vigorous. Those remaining may be reserved until the general spring potting, when they can be shaken out and treated similarly to suckers. Good fibrous loam with the turf well reduced, placed under cover to become dried, is a suitable compost. Drain the pots well, dust soot or dry wood ashes over the crocks to exclude worms, and ram the soil firmly round the plants, keeping them well down in the pots to admit of copious supplies of water being given when necessary; 10-inch pots are suitable for Queens, and 11 or 12-inch for those of more robust growth. A temperature of 60° to 65° will be sufficient for these plants, also those potted last autumn, and about 85° bottom heat. Plants in beds about to be started into fruit must not have the heat at the base of the pots over 90° or 95°, or their roots will be injured. If sufficient fruit be started to meet the requirements, later successional plants that have not been subjected to a high temperature may be advanced slowly, they with autumn-rooted suckers requiring careful watering, especially where the heat at the roots is supplied by fermenting materials.

KITCHEN GARDEN.

PEAS.—All good kitchen gardeners are annually striving to have their first dishes of Peas ready as soon as possible in the spring or early summer months, and they cannot be ready too early or in too great a quantity. The seed we sowed in the open ground in November has germinated freely, and the young plants are now about 1 inch in height. We would rather have them this height now than 6 inches high, as the dwarf plants are rarely injured by wind or bad weather, but the tall ones are very liable to be damaged before March is over. We have almost ceased sowing Peas under glass with the object of forwarding them, as they suffer so much as a rule when transplanted that those sown in the open ground often surpass them. Those who have not sown Peas in the open in January need not be afraid to do so. They are rarely injured by the weather, and we advise every garden owner to make a good sowing at once. For private consumption two or three rows will be enough at a time. Some may say, "Oh, my garden is too small to grow early Peas well." Nothing of the kind. It is not a question of extent of land in their case, and we would undertake to have them ready as soon in a piece of 10 square yards as 10 acres. Carter's Lightning is one of the earliest Peas, and its qualities are first-rate. Sutton's Ringleader is much superior to William I. For all Peas sown at this time in good ground should be selected, and in a position well exposed to the sun. A dusting of soot will benefit those through the soil, but do not render them tender with too much protection.

KIDNEY BEANS IN POTS.—Kidney Beans can only be grown at this time by those having glass houses. They require considerable space and heat to produce them in quantity in the early spring months, and they cannot be profitably grown as a market crop except by those who have special facilities for their culture. A number of dishes may, however, be grown in an early vinery or any warm pit, and the cultivator may be assured they will be much valued on the table, as Kidney Beans in March or April are a delicacy. A good variety for forcing is Cooling's Ne Plus Ultra. Fill a number of 3-inch pots half full of good soil, place six or eight beans in each, cover over with more soil, and place them in a temperature of 65° or 70°. Here they will germinate in ten days, and they should then be supplied with water, and kept in the light. As soon as the plants are 6 inches high they should be transferred into 6-inch or 8-inch pots. If the first size is used put one pot of the small plants into each, but if 8-inch pots are used two or three of the small ones may be turned into this. Use a mixture of rough loam and manure in potting, and make it firm. Water sparingly until they begin rooting, and as soon as they begin growing again water freely, and do not allow the temperature to fall below 65°.

EARLY RADISHES.—These are easily grown on a hotbed. They are sometimes sown amongst other early crops, but we do not approve of this plan, as Radishes make a good many leaves and often hinder their own development or their companion crop. The best way of growing them is to make up a slight hotbed and sow them under a frame on this. One ordinary light will be sufficient to begin with, and the seed should not be sown too thick. French Breakfast is still the earliest of all, and they are very acceptable in their tender young state.

LARGE LEEKS.—"How do you grow those monster Leeks, and when do you sow them?" were questions put to us last August by a gardener who was admiring some specimens 3 lbs. in weight each. Our reply was, "There is no secret in their culture, but they must be sown early;" and that is so. Indeed, all who wish to have very large Leeks in summer should sow a pinch of seed in a box now. If given good soil and a temperature of 65° they will do well for a time, and we will write about them again when they demand attention.

PLANT HOUSES.

Heliotropes.—Heliotropes trained upon walls or pillars should be thinned and pruned without delay. If all the growth made is laid in they become too crowded before the season is over, and small trusses of bloom result. Liberal thinning will cause strong growth, and consequently fine trusses of bloom; White Lady is one of the best for purposes of this description. Top-dress the soil in which these plants are growing with equal portions of loam and manure.

Abutilons.—Where these occupy positions as climbers they may be liberally thinned, and the shoots shortened back. With these, however, it should be determined whether the bloom will be required or not, for with increased light and heat they will flower again freely. If a judicious system of pruning is not practised they soon outgrow the space allotted them. Where a succession of flowers is needed pruning should be done at various periods—that is, as soon as those pruned back break into growth and commence flowering others should be done. The growing ends removed will root freely if inserted singly in small pots and plunged in the propagating frame in a temperature of 65°. Aphides and scale are the worst enemies to these plants; the first is destroyed by fumigating with tobacco smoke, and the latter can be eradicated by the petroleum solution if used at the rate of 3 ounces to 4 gallons of water after the plants have been pruned. If used on the plants while in active growth it invariably turns many of the leaves yellow.

Anthurium Scherzerianum.—Plants that have been resting in a temperature of 50° to 55° may be introduced into the stove or any structure where the temperature ranges about 10° higher. In this temperature they will soon start into activity and produce their brilliant scarlet spathes. Top-dress with rough peat and moss any plants that need it, while those that require larger pots or the renewal of the compost about their roots may be done just as the roots are starting into growth. If this work is delayed until new roots have been formed it is impossible to remove the old soil from amongst them without seriously injuring them. The best and easiest method of removing the decayed soil is to wash it out in tepid water. The plants should be allowed to drain thoroughly before they are repotted. The pots or pans used should be liberally drained, and the compost, which should consist of fibry peat and charcoal in lumps, should be carefully worked amongst the roots. The plants must be lowered into the pots as much as possible, and the soil slightly raised above the rim. It should not be too high, ample room for top-dressing another year being left. Those still in an intermediate temperature must not have too much water, or else their roots will decay instead of remaining fresh and plump. A long succession of blooms may be had by introducing a few plants into the stove at intervals of a month.

Gardenias.—Young stock rooted in August or September should be placed into 5-inch pots without delay. Use a compost of rough peat and loam in equal proportions with a liberal addition of sand. Where it is difficult to obtain good peat leaf mould may be used instead. They will do well in rich loam and sand, but in a young state they make greater progress in a lighter mixture. Place the plants after potting in a close moist atmosphere where the temperature can be kept about 65°. In this heat established plants will swell their flower buds rapidly. Avoid feeding them with strong stimulants, which has a tendency to cause the flower buds to become deformed. Strong insecticides and over-watering will bring about the same results.

Caladium Argyrites.—Well grown plants are not only handsome for decoration in 4 and 5-inch pots, but the foliage is charming in a cut state for associating with flowers for the embellishment of vases. If the tubers have been preserved in the soil in which they were grown last year they may be shaken out and started in boxes of light sandy soil. Directly the tubers commence growth pot them singly according to their size. To do them well they must not be over-potted. It is better to repot them on after they have filled the first size with roots.

Begonia nitida.—Plants of this and its variety rosea that are in 3-inch pots may be placed at once into 5-inch. Pot firmly to prevent them running up tall in a mixture of good loam, one-seventh of manure, and sand. If kept for a time in a temperature of 60° they will soon commence to flower.

Begonia Ingrami.—Those that have been wintered in 2-inch pots may be placed at once into 4-inch size. Where there is a good stock of these plants pinch the shoots of half of them, selecting the smallest plants for the purpose, while the remainder may be allowed to extend, and in a short time they will be ready for the stove. Cut back plants that have been doing duty more or less all winter, and insert a good batch of cuttings. These will root freely enough if inserted in sandy soil in pans and placed on a shelf where the atmosphere is moderately dry. The old plants of B. Knowsleyana may also be cut back and the necessary cuttings inserted.

Begonia weltoniensis.—This variety, with others of a similar nature, may have their old branches well shortened back. The soil may be shaken from their roots and the plants repotted in fresh, and then started into growth in a temperature of 50°. If water is applied carefully there is no need to delay potting until after they have broken into growth.

THE FLOWER GARDEN AND PLEASURE GROUND.

Verbenas.—Seedling Verbenas are not suitable for forming neat edgings or for a band or mass of one colour, being of too vigorous habit and much mixed. At the same time they are very effective for mixed beds, and also for borders. Many very pretty varieties are included in a single packet of seed. If the seed is new it germinates quickly, but if old it may be several weeks before it starts. Sow in pans of light sandy soil, cover lightly, and moisten carefully. Then plunge the pans in a rather brisk bottom heat, cover with a square of glass, and shade heavily till the seedlings appear. Keep the latter growing in gentle heat, and when of good size prick out into pans or boxes of light and fairly rich soil. When tall and strong enough, the tops of these seedlings may be taken off and struck, plants thus obtained not growing so rankly when planted out. Verbena venosa, an old-fashioned and useful border or bedding plant, may also be raised from seed, but root cuttings afford the best plants. Stock plants of named Verbenas should still be kept in a cool house, pit, or frame. When placed early in heat they are apt to get infested with insects, and the cuttings are also hard and wiry. Strong sappy cuttings are the most easily rooted, and these only develope into healthy plants. They may be struck in quantity as late as May.

THE BEE-KEEPER.

PRACTICAL BEE-KEEPING.—No. 29.

QUEEN INTRODUCTION.

CONTINUING my remarks on this subject from page 74, last week, it was not my intention to allude to any other method of introduction, but when reading Mr. Simmins' "B" method, it struck me that it might, in certain cases, and under some circumstances, be very useful. It must be understood, however, that I have no experience of the plan in practice, and must therefore rest content in giving Mr. Simmins's own words without comment. "When a queen is received, at once make up a nucleus to receive her; form a strong colony, take one frame of hatching brood with adhering bees, and place in a nucleus hive, say 14½ inches by 4¾ inches, by 9 inches deep inside, then shake off most of the bees from another comb into such small hive, and on either side of the one containing brood place one comb of honey. Close the entrance with perforated zinc, and place on top a sheet of straining cloth tacked to a simple frame. Thus securely confined, and having ample ventilation, they are to be taken into a warm dark room. In a few minutes, finding themselves confined and queenless, a great uproar will be heard. Now slide frame of strainer cloth just off one corner and let queen run in, keeping bees back with little smoke if necessary. Close again, and let them remain indoors until the third day, when stand out where desired. After a day or two give another frame of hatching brood, which repeat at intervals of seven days, or as often as they appear able to cover more combs until well established. In this case the bees are reduced to exactly the same conditions as the recently confined queen."

The advantage of being able, by some one of the methods described in this and the preceding paper, to supersede and introduce new queens is very great. In some apiaries this power is abused. Bee-keepers of a certain stamp are never content to leave well alone. No doubt it is most proper to attempt to improve, but it is wise to leave "well," alone until there is a fair prospect of making it "better." Stocks are disturbed too often; queens are superseded at all seasons, sometimes necessarily, but more often without good cause. A bee-keeper is often—especially in his early years, when he is buying experience at the usual dear price—fidgetty, and wants to be "doing something." He cannot understand that his interference may not only not benefit a stock, but may actually retard it, and in some cases ruin it. Let such bee-keepers think twice before destroying a queen in order to supersede her! If they are sure that the manipulation is a wise one, taking everything into consideration, it must be done without delay, whatever the time of the year may be, "unless it is in the coldest months;" but where possible all re-queening should be done either in early spring or in late autumn. Nothing is then lost, but much is gained. The danger of purchasing queens without proper precautions has already been alluded to, and no further comment is therefore necessary. Every bee-keeper should at least make a trial of the direct introduction method, but it will be advisable to do so on a small scale. Success will give confidence, and confidence having once been secured, the "cages" and other paraphernalia to which we have been accustomed will be swept away and consigned to the sea of oblivion.—FELIX.

BEES WEARING OUT AT THE HEATHER.

RIPENING HONEY.

SUFFICIENT has been said on the above both by "A Hallamshire Bee-keeper" and myself. Your readers have had our opinions and experience, so I do not think prolonging of the discussion would be advantageous, but I will touch a salient point or two of "A Hallamshire Bee-keeper's" assertions. First, in regard to bees dwindling at the Heather, "A Hallamshire Bee-keeper" seems to misunderstand what I meant by "I have witnessed hives at the moors having nearly all their bees lost, but not by working on the Heather, but by some occult influence of Heather or season I cannot explain." The explanation of the above is the bees died from some cause, not by working upon the Heather, nor by flying out at unfavourable times, nor by being lost on their homeward journey, but the bees died within their hives and were thrown out, and in some seasons I have witnessed bins of dead bees lying at every hive equal to ordinary swarms, and when neither robbing nor fighting had taken place either. Can "A Hallamshire Bee-keeper" help to explain? I cannot, and in all other respects my opinion is still the same as I have previously stated. In regard to bees dwindling there is still much to learn. Judicious crossing is the antidote to weak constitutions, but what about nocturnal enemies to bees? I have never observed a single line upon that, unless it was the toad. Is there no creature that preys upon bees after we bee-keepers are sound asleep? I am inclined to think there is. This year when heaps of drones were lying dead in front of the hives at dusk not one could be seen at sunrise. I saw no hedgehogs, but will they confine their appetite to dead ones only? I know something of their carnivorous and insect-eating propensities, and what a number they could consume at one meal, and how easily the bees would be caught during a honey glut. Then the wagtails during the day consume many dead ones, and probably living bees too. For a number of years (at the moors) I have observed on the tops of the hives large quantities of droppings, composed wholly of digested and semi-digested bees, and judging from the size of these the animal could not be less in size than a large owl. Is it possible this is an enemy to bees hitherto unsuspected? Whatever it is that eats bees at the Heather there need be no question but that many are eaten by enemies unknown to us, but which we should endeavour to find out.

I trust these remarks will make things clear to "A Hallamshire Bee-keeper."

BEES CHANGING THEIR WORKING GROUND.

I cannot alter my opinion regarding bees changing their working ground frequently at different time of the day, suitable to the flow of honey, for I have witnessed the phenomenon so often. In regard to bees working only when the sun shines, there is much truth in that, but still our finest honey days are when the sun is obscured behind a sultry and peculiar haze with a temperature of 65° to 75° Fahr. As the sun brightens it often brings along with it a parching drought that puts an end to all honey gathering, often for the season too. Honey under a bright sunshine is usually most plentiful when the temperature is not higher than from 70° to 75° in the shade. The time bright sunshine is most beneficial to bees is during the spring months, and for a few days before the sultry honey gathering ones which often precedes a thunderstorm and ends the honey season.

As already stated I will not prolong the discussion, but will, for the benefit of your readers, explain that honey unsealed may be ready for sealing to-day, but if the interior of a hive is cooled to a low temperature the honey therein may contain much water to-morrow. The same thing in addition to losing its flavour occurs when kept any length of time exposed to the atmosphere, hence one of the reasons honey deteriorates in quality when put through a ripening process.

Many modern innovation and invention for the management of bees are hindrances rather than otherwise. To wit, the feeding or "picknicking" bees in the spring with sweetened water wears out the bees, and other mischief follows. If bees are in search for water they will not provide themselves with it from that sweetened with sugar, but while flying long on the wing in the intervals of sipping it they discharge the water, retaining the sugar only. This act of the bees is easily observed by placing yourself so that the bees are between you and the sun. A proof that bees do not depend on water for breeding purposes from honey is the fact when honey is most plentiful, and breeding going on briskly, the marshes and water resorts are more frequented by bees than when honey is scarcer.—A. L. B. K.

TRADE CATALOGUES RECEIVED.

Samuel Yates, 16 and 18, Old Millgate, Manchester.—*Seeds and Garden Requisites, 1888.*

Hogg & Wood, Coldstream-on-Tweed.—*Garden Seed List for 1888.*

W. Piercy, 89, West Road, Forest Hill, S.E.—*List of Early or Summer-Flowering and Late Chrysanthemums.*

John Perkins & Son, 52, Market Street, Northampton.—*Catalogue of Vegetable and Flower Seeds.*

Thomas Davies & Co., Wavertree Nursery, Liverpool.—*Catalogue of Vegetable and Flower Seeds.*

Daniels Bros., Norwich.—*Selected Guide for Amateurs, Spring, 1888.*

Kelway & Son, Langport, Somerset.—*Manual for 1888.*

James Coeker & Sons, Aberdeen.—*Catalogue of Vegetable and Flower Seeds, 1888.*

P. J. Kane, Kells, County Meath.—*Catalogue of Vegetable and Flower Seeds, 1888.*

M. de Reydellet, Valence (Drôme), France.—*Catalogues of Chrysanthemums for 1887 and 1888.*

Jno. Jefferies & Son, Cirencester.—*Catalogue of Seeds and Bulbs, 1888.*

Thos. Hersman, 102, Godwin Street, Bradford.—*Catalogue of Garden Seeds, 1888.*

Vilmorin, Andrieux, & Co., 4, Quai de la Mégisserie, Paris.—*General Catalogue of Seeds for 1888.*

TO CORRESPONDENTS

*** All correspondence should be directed either to "The Editor" or to "The Publisher." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Subscription for the Journal (*F. Walker*).—The amount received will insure the Journal being posted to your address at the antipodes till January, 1889, or for eleven months from the date of the present issue. We are sorry that an occasional number should fail to reach its destination, but on the whole we have few complaints on the subject from subscribers in Australasia.

Cucumber Root Disease (*R. T., Oporto*).—It is quite probable your plants are attacked with the disease that has been illustrated in our columns by Mr. W. G. Smith, and for which a solution of salus applied to the soil has been recommended by him as a preventive. We understand, however, that salus is not now prepared for sale. Roast the soil so as to destroy all germs, moistening it before using. This scorching does not impair, but rather increases its fertility.

Camellia Buds Falling (*R. S., Southampton*).—There is no doubt whatever that the dry heated air from the hot-water pipes is the chief cause of the evil; it is possible, too, that the plants in pots do not have the support they need, and a gentle stimulant such as soot water might be beneficial. If the stage is of open latticework you would do well to cover it with something that would hold a layer of gravel, and by keeping this moist and syringing the pots occasionally the flowers of the Camellias would probably expand.

Peaches for Planting (*G. A.*).—You cannot do better than plant the Nectarine you name, Pine Apple. If you want a succession of Peaches, plant Grosse Mignonne, Bellegarde, and Barrington. If you plant Royal George it would ripen before you had finished gathering Grosse Mignonne. Alexandra Noblesse is a splendid Peach, but tender in the skin, and is easily damaged; at the same time it is rather shy. Dymond is an excellent Peach, but not better than Royal George. If you could place the last-named at the coolest portion in the house, then we should prefer it to Bellegarde, for the flavour is superior.

Clematis Jackmanni (*A. R.*).—We think you had better not prune your plant until March. It is not at all uncommon for the first early growths to be killed or seriously injured by sharp frosts; and if you cut back the stems now the back buds will be forced into growth the sooner, possibly to be injured, whereas by allowing the first growths, now pushing, to expand they will take the sap, the lower buds remaining dormant the longer. Towards the end of March, or when severe frosts are no longer expected, cut back the shoots to the prominent buds on the stems, not below them, and these will start strongly, and flowers will be produced abundantly in due season. The extension of the early growths to which you refer will not weaken the plant, but incite root action ready for supporting the later growths when the first are removed in pruning.

Unripe Vine Wood (*S. K.*).—The laterals you have sent are not only immature, but essentially weak, and indicate that the Vines are in a very unsatisfactory state. The composition of the border does not appear to be faulty, but either some mistake has been made in respect to insufficient pruning after planting, or in heating and ventilation. What length were the canes when planted, to what extent were they shortened, and what length and strength of growth did they make the first season? If you answer these questions, and indicate the time of starting the Vines, the temperature maintained, and the general routine of management pursued, we may perhaps be able to give a more definite reply on the subject, at present we are not in possession of information that is necessary for answering your letter satisfactorily to ourselves. If there has been no mistake in management we should be inclined to suspect the presence of the phylloxera, but have not sufficient grounds.

Successful Tree Planting (*C. B.*).—While we congratulate you on your success, we are scarcely in a position to say it is unprecedented, because we have not known a similar number of trees of the same age removed under exactly the same conditions as to soil and weather influences. Speaking generally, we think there are many gardeners who could transplant the same number of trees successfully. We, however, print your question as the best means of eliciting the required information. "At the end of 1886 and beginning of 1887 I prepared and planted ten and a quarter acres with standard fruit trees, ranging from five to nine years old—Apples, Pears, Plums, and Damsons, in all 710 trees. Notwithstanding the very hot, dry, trying summer for newly planted trees, not one has died, but all are healthy and strong, and the root action all that could be desired. The only watering during the hottest time was to twelve large trees that looked sickly, but these recovered their healthy condition. I should like to know if my success is unprecedented." What have gardeners and tree planters to say on this record of good work?

Roses for the Neighbourhood of a Town (*Mum Grower*).—You cannot do better than plant the following H.P.'s—Général Jacqueminot, scarlet crimson, splendid in the bud; Louis Van Houtte, reddish scarlet, heavily shaded with purple, a grand dark rose; Madame George Paul, bright rose, heavily shaded with violet purple; Prince Camille de Rohan, dark maroon crimson, one of the finest of dark Roses; Abel Carrière, purplish crimson, with violet and black reflection; Mons. Boncenne, intensely rich crimson. Tea varieties; Gloire de Dijon, fawn tinged with salmon and rose; Grace Darling, base of petals creamy white, deeply tinted and shaded pinkish peach, full, very free; Madame Lambard, salmon pink, shaded rose, given to sporting, sometimes the blooms are of a rich peach colour, at others of a coppery hue, and occasionally these two features are distinctly prominent; Etendard de Jeanne d'Arc, cream, changing to pure white, very full; Marie Van Houtte, yellowish white, slightly shaded rose; and Rubens, white, delicately tinted with rose. Procure strong and especially well-rooted plants, even if you pay a little extra for them, weak and ill-rooted plants not gaining strength near towns in the same way as in country gardens.

Furnace not Drawing (*A Thirty-years Subscriber*).—Something is radically wrong with the way the flue from the boiler furnace enters that of the part underground, or in the flue itself. We had a similar case to deal with only a short time ago. Our conservatory boiler—a wedge saddle—had its flue and chimney near the conservatory, a new chimney having been made expressly for it since the boiler itself would not draw, as the old "flue has to pass under ground for a long distance" before the smoke reached the chimney. The new chimney was both "a nuisance and an eyesore." We had the boiler reset, and only took the simple precaution to assure the flue, as it left the boiler, having a gentle rise into the old underground disused flue. The fire being lighted, all the smoke came out at the furnace door—even the ashpit. There was the usual twitter, "I told you so,"—indeed, so said everybody; and, as often happens, everybody was wrong. We had taken the precaution to put in a soot door at the bottom of the chimney shaft, and, opening this, the smoke came out freely. Nothing was wrong with the flue, but for a time the smoke would not ascend the upright shaft. We introduced some straw into the chimney through the soot door, and tried to light it with a taper, but the flame of the taper was soon extinguished. The flue had been full of foul air, and no wonder, as it had been disused; but it was stated to be damp, and would never draw. We let the smoke come out of the soot door, and lighted the straw outside, but it would not draw through the soot door up the chimney—in fact, the issuing smoke from the flue put out the flame; but the putting out was only making way for the ascent of the smoke through the escape of the foul air by the soot door. After a time the chimney drew so well that it took the smoke and flame of straw 3 feet outside the soot door—roaring like a furnace, and the soot door being shut has not smoked since. In hope of being of service, we think the experience worth recording. How it may apply to your case can only be determined on the spot. We should certainly try something before going to the expense you suggest. If you suffer from down draught, perhaps a cowl—a spinner—on the chimney would make all right; but we apprehend the fault lies in the boiler flue not having sufficient "rise" into the underground one. If you look through the advertisements of the present and a few back numbers of the Journal you will find gas-heated boilers that may be useful should you decide to employ gas. Provision must be made for the exit of fumes, a small pipe sufficing, and receptacles are necessary for collecting the moisture that is produced by the consumption of gas.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*Lady Gardener*).—Garrya elliptica. (*W. B. R.*).—1, A good variety of Cœlogne cristata; 2, A variety of Dendrobium nobile resembling one called cœrulescens; 3, Sophronitis grandiflora. (*T.*).—Pteris longifolia.

COVENT GARDEN MARKET.—FEBRUARY 1ST.

No alteration to quote this week this week with the exception of Cobs, for which there is scarcely an inquiry.

VEGETABLES.

	s.	d.		s.	d.		s.	d.		s.	d.
Artichokes, dozen	1	0	to	2	0	Lettuce, dozen	0	3	to	1	3
Asparagus, bundle	0	0		0	0	Mushrooms, punnet	0	6		1	0
Beans, Kidney, per lb.	1	0		0	0	Mustard and Cress, punt.	0	2		0	0
Beet, Red, dozen	1	3		2	0	Onions, bunch	0	3		0	0
Broccoli, bundle	0	0		0	0	Parsley, dozen bunches	2	0		3	0
Brussels Sprouts, ½ sieve	3	6		4	0	Parsnips, dozen	1	0		0	0
Cabbage, dozen	1	6		0	0	Potatoes, per cwt.	4	0		5	0
Capsicums, per 100	1	6		2	0	„ Kidney, per cwt.	4	0		0	0
Carrots, bunch	0	4		0	0	Rhubarb, bundle	0	2		0	0
Cauliflowers, dozen	3	0		4	0	Salsafy, bundle	1	0		1	6
Celery, bundle	1	6		2	0	Scorzonera, bundle	1	6		0	0
Coleworts, doz. bunches	2	0		4	0	Seakale, basket	1	0		1	3
Cucumbers, each	0	6		1	3	Shallots, per lb.	0	3		0	0
Endive, dozen	1	0		2	0	Spinach, bushel	1	6		2	0
Herbs, bunch	0	2		0	0	Tomatoes, per lb.	0	6		1	0
Leeks, bunch	0	3		0	4	Turnips, bunch	0	4		0	6

FRUIT.

	s.	d.		s.	d.		s.	d.		s.	d.
Apples, ½ sieve	1	6	to	3	6	Oranges, per 100	2	0	to	5	0
Nova Scotia and Canada barrel	10	0		18	0	Pears, dozen	3	0		6	0
Cobs, 100 lbs.	45	0		0	0	Pine Apples, English, per lb	0	0		0	0
Grapes, per lb.	2	0		3	6	St. Michael Pines, each	3	0		5	0
Lemons, case	10	0		15	0						

PLANTS IN POTS.

	s.	d.		s.	d.		s.	d.		s.	d.
Aralia Sieboldi, dozen	6	0	to	12	0	Fuchsia, dozen	0	0	to	0	0
Arbor vitæ (golden) dozen	6	0		9	0	Hyacinths, dozen	6	0		12	0
„ (common), dozen	0	0		0	0	„ (Roman), doz.	9	0		10	0
Azalea, dozen	24	0		42	0	Hydrangea, dozen	0	0		0	0
Begonias, dozen	0	0		0	0	Lilies Valley, dozen	18	0		24	0
Chrysanthemums, dozen	0	0		0	0	Lilium lancifolium, doz.	0	0		0	0
Cineraria, dozen	10	0		12	0	Marguerite Daisy, dozen	9	0		12	0
Cyclamen, dozen	12	0		24	0	Mignonette, dozen	0	0		0	0
Dracæna terminalis, doz.	30	0		60	0	Musk, dozen	0	0		0	0
„ viridis, dozen	12	0		24	0	Myrtles, dozen	6	0		12	0
Epiphyllum, dozen	10	0		18	0	Palms, in var., each	2	6		21	
Erica, various, dozen	9	0		18	0	Pelargoniums, dozen	0	0		0	0
Euonymus, in var., dozen	6	0		18	0	„ scarlet, doz.	8	0		12	0
Evergreens, in var., dozen	6	0		24	0	Poinsettia, dozen	12	0		15	0
Ferns, in variety, dozen	4	0		18	0	Solanum, dozen	9	0		12	0
Ficus elastica, each	1	6		7	0	Tulips, dozen pots	6	0		9	0
Foliage Plants, var., each	2	0		10	0						

CUT FLOWERS.

	s.	d.		s.	d.		s.	d.		s.	d.
Abutilons, 12 bunches	3	0	to	6	0	Lilies, White, 12 bunches	0	0	to	0	0
Anemones (French), 12 bunches	3	0		4	0	„ Orange, 12 bunches	0	0		0	0
Arum Lilies, 12 blooms	5	0		8	0	Lily of the Valley, 12 sprays	0	9		1	6
Asters, 12 bunches	0	0		0	0	Mignonette, 12 bunches	3	0		6	0
Azalea, 12 sprays	0	8		1	0	Narciss, white (French) 12 bunches	3	0		9	0
Bouvardias, bunch	0	6		1	0	Pelargoniums, 12 trusses	1	0		1	6
Camellias, 12 blooms	3	0		4	0	„ scarlet, 12 trusses	0	6		0	9
Carnations, 12 blooms	1	0		3	0	Poinsettia, 12 blooms	4	0		8	0
Chrisimas Roses or Hellebore, 12 blooms	0	6		2	0	Primula (single), bunch	0	6		0	0
Chrysanthemums, 12 bchs.	15	0		24	0	„ (double), bunch	0	9		1	6
„ 12 blooms	2	0		4	0	Polyanthus, 12 bunches	0	0		0	0
Cyclamen, 12 blooms	0	6		1	0	Ranunculus, 12 bunches	0	0		0	0
Daisies, 12 bunches	2	0		4	0	Roses, Red, 12 blooms	12	0		18	0
Epiphyllum, 12 blooms	0	6		0	9	„ (indoor), dozen	3	0		4	0
Encharis, dozen	4	0		6	0	„ Tea, dozen	1	6		6	0
Gardenias, 12 blooms	18	0		30	0	red, dozen (French)	1	6		3	0
Hyacinths, Roman, 12 sprays	0	6		1	0	„ yellow	4	0		9	0
Iris, 12 bunches	0	0		0	0	Stephanotis, 12 sprays	0	0		0	0
Lapageria, white, 12 blooms	2	0		8	0	Tropæolum, 12 bunches	2	0		3	0
Lapageria, coloured, 12 blooms	1	0		1	6	Tuberoses, 12 blooms	1	0		1	6
Lilium longiflorum, 12 blooms	6	0		9	0	Tulips, dozen blooms	0	9		1	6
Marguerites, 12 bunches	2	0		6	0	Violets, 12 bunches	1	0		1	6
						„ (French), bunch	1	9		2	3
						„ (Parme), bunch	5	0		7	0
						White Lilac, per bunch	6	0		7	0



WINTER FOOD FOR SHEEP AND CATTLE.

Much nonsense is written about a mild winter affecting the price of food for the animals of the farm, and we must own to a feeling of wonder that writers upon agriculture should allow themselves such latitude, but it has become so much a habit with many literateurs to impart a tinge—often something more—of sensationalism to their work that mere force of habit may perhaps be pleaded in extenuation of what in our opinion is a lamentable fault. A late autumn or early spring does undoubtedly afford the grazier much valuable food, but a few weeks of mild weather during midwinter have no appreciable effect upon growth, and certainly contribute nothing to our store of winter food.

A short crop of hay, and very generally an equal falling off in the root crop, have straitened the means of so many farmers, that it cannot fail to prove useful if we invite attention to the provisiou of winter food in view of some degree of future improvement in practice. A light land farmer whom we met recently was loud in praise of his stack silage. We entirely agree with him that ensilage affords a much larger bulk of wholesome nourishing food than can be had from hay or straw, and it is in the power of every farmer to make such provision of it as he require irrespective of climate or weather. Prejudice has kept many a man from trying his hand at making silage, but enough sensible men have now taken the matter up in real earnest to induce others to follow, and ensilage has taken its legitimate place among the regular operations of the farm. The best raw material for silage is any forage growth which can be had before it has gone beyond the flowering stage. Seed development makes such heavy demands upon the economy of every plant that a heavy per-centage of nutriment is absorbed from leaf and stalk, which becomes proportionately less valuable for feeding purposes, no matter how it may afterwards be prepared for storage or use. Dealers in such nostrums as cattle spice tell us that by scattering a certain quantity of it among such inferior forage we render it both palatable and nourishing. Do we? Really, it might be expected that even such men might give farmers credit for the possession of sufficient intelligence to avoid the waste of money upon their so-called specifics; yet the lamentable fact remains that money is so spent, even under a heavy depression, which should render everyone careful to avoid mistakes.

We have repeatedly called attention to the value of unthreshed

Oats when chaffed with the straw, and we again strongly recommend it as one of the very best articles of winter diet for cattle, horses, and sheep. There is, however, much difference in the nutritive properties of such straw, some having twice the feeding value of other straw. The least nourishing and most indigestible straw is that from poor land, and which has become dead ripe before harvest; the best is from rich soil, and which was mown immediately after the grain passed out of the milky stage. By the term of milky stage we mean when a white milk-like juice can be squeezed out of the grain; when this is at an end the grain is sufficiently developed for harvesting. Very hard, dry, over-ripe straw contains so much woody fibre that it has a low feeding value, and makes a heavy tax upon an animal's digestive organs. We altogether object to having food pass through its stomach undigested, as such straw often does, just as uncrushed Oats pass through the bowels of old sheep, horses, and cattle. As a case in point, we may mention that of an old horse sent from the home farm as a garden horse. Our orders that it should have all its food chaffed or crushed were disobeyed, and we at length discovered that the poor animal, though consuming much food, was being slowly starved. It was at once replaced by a younger horse, and subsequently recovered health and vigour so as to be really useful upon the farm.

Next in general value to Oat straw when chaffed we may place Bean straw, which is richer in digestible constituents, and is more nutritious than any other. Then comes Pea and Barley straw both which, when chaffed, should have the pods and grain chaff mixed with it, as being much more nutritious than the straw itself. We have in recent articles explained how highly we value unchaffed Pea straw for the ewes. In either form it is most useful and we may mention that a flock of healthy young ewes have recently been having chaffed Pea straw with some Oats in folds upon a stout piece of Mustard, to be followed by a crop of Barley. Meadow hay is generally held in reserve for the dairy cows when there is such a herd, not simply for its nourishing properties, but rather because it is so sweet and wholesome that it imparts no unpleasant flavour to the butter at this season of the year. For other purposes as hay can be dispensed with, and it should at any rate be kept untouched as long as possible, either to be turned to under the difficulties of a late spring for a most welcome and valuable supply of nourishing wholesome foed, or if not wanted to be sold, and so contribute something towards the Lady Day rent.

WORK ON THE HOME FARM.

Gladly do we record the fact that the whole of our ploughing in arrears is finished, and that the sowing of Peas and Tares has already been done. Wheat is a strong full plant; so, too, are winter Oats and Beans. We feel hopeful now that there will be no serious loss among Beans such as happened last winter, and with a fair seed time for spring corn we hope to have a full plant upon all our farms this year. Given this it shall be our endeavour to render every crop as vigorous and productive as possible. Our arrangements for the application of chemical manures are now under consideration, for we hold that in order to render farm crops profitable now the soil must contain an ample store of manurial constituents, and the plants of the farm, just like the animals, must be kept going in unchecked vigour from the first. We must have quantity in combination with quality if we would hold our own under foreign competition. The fertility of the soil must be fully sustained, and every perch of farm land rendered productive of a profitable crop. Such a standard is undoubtedly a high one, but we cannot rest content with anything short of it. Why, indeed, should we? Dire necessity is teaching us most valuable lessons of thrift, perseverance, and energetic action, and anything like easy-going action in farming practice is altogether a thing of the past.

Glad are we to find more attention being given to dairy farming, for it is a standing reproach to the British farmer that importations of butter, condensed milk, and eggs have reached such huge proportions. Success with either dairy produce or poultry is simply a matter of detail. Eggs and chickens are always a saleable commodity, and first-class butter soon commands a first-class price. It takes some little time to establish a reputation for dairy produce. Once gained it has only to be sustained in order to render it fully profitable. But a farmer must not leave this important matter to the sole management of his wife or servants, he must see that the cows are well bred, well tended, and that the land affords an ample store of the best food for them. We have now plenty of Rye for cows to graze, and the effect upon the butter is almost equal to that of grass in spring.

BRITISH CULTIVATION OF TOBACCO.

An adjourned conference, presided over by Sir E. Birkbeck, was held recently at the Salisbury Hotel, for the purpose of forming an Association for resuscitating and encouraging Tobacco cultivation in England, Scotland, and Ireland under profitable conditions. The report of a Committee previously appointed, presented by Mr. Kains-Jackson, stated that the East and West India Dock Company have offered free storage in London for the present year where Tobacco can be prepared to compete for the £50 prize offered by the London Chamber of Commerce. The samples grown in Great Britain have been remarkably free from damage, the injury done by insects being insignificant; but out of sixty-four varieties tried opinion favoured only about six as being suited for home cultivation. The Committee were of opinion that, all things considered, the experiments were very satisfactory and encouraging, and that Tobacco cultivation in England, Ireland, and Scotland might be easily carried out and become a profitable British industry which in the course of time would probably be taken up by tenant farmers in suitable districts. The Chairman stated that letters on the subject had been received from Lord Walsingham, Lord Torrington, Mr. Mark Stewart, M.P., Mr. Colman, Mr. E. Beck (Prince of Wales's agent), and others. One question, he said, would be whether the Treasury would allow the Association to issue licences for growing Tobacco in the United Kingdom; another whether a deputation should ask the Chancellor of the Exchequer to allow a drawback, or whether there should be a duty of so much per acre. Mr. Sharman, of Messrs. Carter & Co., stated that the firm had received nearly 400 letters on the subject, and that Tobacco had been successfully grown in Wales and in Ireland. Mr. Wright, of Sales, Pollard & Co., said that English manufacturers generally would be glad to take the matter up, and that his firm had purchased Lord Walsingham's Tobacco. On the motion of Mr. Hastings of Devonshire, seconded by Mr. Sharman, an Association was formed, and it was further resolved that Sir E. Birkbeck shall be Chairman, and the following gentlemen members of the Council: Lord Walsingham, Mr. W. L. Wigan, Mr. Kains-Jackson, Mr. E. J. Beale, Mr. Mitchell-Henry, Mr. J. Sutton, Mr. Veitch, Mr. Mark Stewart, M.P., Mr. C. H. Sharman, and Mr. Faunce De Laune, with power to add to their number. It was also agreed to ask Lord Harris to become President. In the course of conversation it was stated by Mr. Lewis Morris, of the London Chamber of Commerce, that Tobacco from the South of Europe can be delivered in England at 3d. per pound, and with this British Tobacco would have to compete. A specimen of the latter, grown unsheltered in a 20-acre field, was shown to him and declared to be serviceable Tobacco for pipes. Sir Spencer Wilson said he had some difficulty in getting rid of his stock, and that his farm was visited twenty-four times by the excisemen. A vote of thanks to the Chairman terminated the proceedings.

Much attention has been drawn to Tobacco culture in this country lately, and an Association has been formed to promote the interests of those engaged in the work, but British farmers will be wise to pause before they engage in an undertaking of such very uncertain character. Apparently the most that the advocates of home culture can state in its favour is that a working man's Tobacco of medium quality can be produced here, and this would have to compete with continental grown Tobacco of a generally superior character that can be purchased at 3d. per lb. Some home-grown Tobacco has been sold at as low prices as 1d. and ½d. per lb., and such imaginary prices as 6d. to 8d. per lb. cannot be realised.

The methods of preparation also are not well understood, and much of the quality of Tobacco is dependent upon its due ripening, drying, or fermentation in the leaf before it reaches the manufacturers' hands. I have lately had samples of Tobacco, cigars, and cigarettes from two sources given me for trial, and though they had been carefully manufactured and were rather taking in appearance, they were distinguished by a flat herby taste or an unpleasant scorching effect on the tongue and throat. During the past thirty years I have frequently grown Tobacco in gardens, but it was always useless for all purposes except ordinary fumigating in plant houses.—An Old Grower and Smoker.

The above was crowded out of our columns last week, and in the meantime we have received the following report of an interview on the subject of Tobacco culture in this country with Messrs James Carter and Co, by a representative of "Barker's Trade and Finance:"—

TWO YEARS' EXPERIMENTS.

"What judgment have you formed," asked our representative of Messrs. Carter & Co.'s manager, "upon the experiments of the last two years?"

"We have established this, at all events," was the reply, "that Tobacco can be grown in this country as a profitable farm crop. Our first experiments were made in the spring of 1886, at Holloway Farm, at the foot of Bromley Hill, in Kent. We got our first crop promptly into market, and it was purchased in the month of December of the same year by Messrs. Cope, of Liverpool, and we hope to be able to show the manufactured article from Messrs. Cope at Wednesday's meeting, January 18th. Last year we planted an acre of Tobacco upon the same land, being determined to ascertain whether Tobacco can be grown for successive years upon the same ground. All that we did was to apply about ten cartloads of farmyard manure, some ashes, and 5 or 6 cwts. of special artificial manure. The result was a success, notwithstanding that a portion of the land was more or less overshadowed by trees, and

the soil of a shallow and light description. The summer months last year were remarkably deficient in rainfall, and this had the effect of diminishing the average weight per plant. Then again, in August and September there was a considerable rainfall, accompanied by cold nights, just at the time when warm weather was needed ; while on the 1st of September there was a gale of unusual severity, which destroyed not only Tobacco but other growing crops. These facts, and the probability of early frosts, show that it is not safe to leave the Tobacco plants upon the land after the 15th of September. In our judgment neither the season of 1886 nor that of 1887 was as favourable for Tobacco cultivation as we could desire ; but the experiments which we carried out simultaneously with Lord Walsingham, Sir Edward Birkbeck, M.P., and Mr. Faunce de Laune, have, nevertheless, been so successful that next season they are likely to take place upon a considerably extended scale."

THE BEST VARIETIES.

"What varieties of Tobacco do you think most suited to the English soil ?"

"Well, the experiments this year were made with no fewer than sixty-four varieties which we obtained from every possible Tobacco-growing country—from the United States, from China and Japan, from Turkey, and from many other places. As a result, we are of opinion that the kinds best adapted to our English summer, and calculated to give the largest return, are the Big Frederick, the Kentucky, the Connecticut, and a 'Havana' Tobacco which reaches us from America. The average weight (green) of the Big Frederick was about 1 lb. 11 ozs. per plant ; of the Kentucky, 1 lb. 9 ozs. ; of the Connecticut, 1 lb. 10 ozs. ; and of the 'Havana,' 1 lb. 7 ozs. Other varieties ranged from 8 ozs. to 1 lb. 5 ozs. per plant. Allowing the full acre to have been occupied with the varieties of which we took special notice of weights, the number of plants would be 4840, and the gross weight 2 tons 14 cwt., or in round figures 6000 lbs. As the plants shrink from 60 to 65 per cent. in the process of drying and stripping from the main stem, there should remain about 1500 lbs. of Tobacco as the produce of 4840 plants. This quantity, calculated upon a sale price of about 6d. per lb., would show a return of upwards of £40 per acre."

AN ESTIMATED BALANCE SHEET.

"We have," continued Messrs. Carter & Co.'s manager, prepared a number of balance sheets, which we think fairly show the figures as they would affect the farmer. Let us take that relating to the Big Frederick Tobacco, which is an early kind, a strong grower, and one specially suited to our English climate. On the credit side of the account we put the sum of £50 from the sale of 3000 lbs. of Tobacco at 4d. per lb., which is the lowest price which Tobacco of average quality is likely to fetch. Then come our expenses. We put the rent of an acre of land, with buildings and incidental charges, at £3 ; we allow for ploughing and harrowing, for farmyard manure and guano, for the plants, for pruning, topping, and other manual labour ; for cutting and carting, curing and stripping, sorting and packing. We figure out all these charges in detail, upon the basis of our own experiments, and we find the total expenditure of the farmer upon this acre of land would be £24 17s. 8d., giving him a profit of £25 2s. 4d. This, be it remembered, is for a crop which can be grown on the same land year after year."

FURTHER EXPERIENCE NEEDED.

"Have you any reason for discouragement?" asked our representative.

"No, we can scarcely say that," was the reply. "Our great difficulty consists in want of experience. All those who have experimented with Tobacco have, of course, obtained the services of skilled Americans to assist in the preparation of this English-grown Tobacco, but there are certain circumstances, climatic and otherwise, which make a different course of proceeding to that followed in the States necessary in this country. No doubt, however, we shall get over these troubles, particularly if the present experiments are continued on a larger scale. They would, of course, be greatly developed if the Government could be induced to place as few impediments as possible in the way of the cultivation. Our personal experience is that the Inland Revenue authorities are most desirous of helping us as far as is consistent with the regulations. But they are bound down by red tape, and to such an extent that it is almost a wonder the growers and the Government representatives get along so comfortably as they do. If we produced ten times as much Tobacco as we now do it would not interfere with the Revenue, and therefore it is a little difficult to see why such a fuss is made about it. One of the things we need is a simple method of dealing with the refuse. The stalk of the Tobacco plant, for example, has no commercial value yet we cannot burn it till the Excise officers come along and give approval to the operation."

A CENTRAL BONDED WAREHOUSE.

"Do you not think that, under some well-defined scheme, the Customs difficulty could be very much modified ?"

"Yes ; and on that point I have made a suggestion which is likely to be adopted. It is that there should be established—say in London—a bonded warehouse, to which the Tobacco from various farms might be sent, and where the whole of the stages, from the curing to the putting of the article in the market ready for the smoker, might be gone through. Or, if it is more desirable, there might be a number of bonded warehouses in the Tobacco-growing districts, where the plants could be sent by the farmers, and where the curing could take place. In this way the labour of the Excise officials would be diminished, while the farmer would be sure that his produce would be properly treated. It does not matter very much to the dairy farmer whether he sends away milk, or milk in the shape of cheese. In the same way, if the farmer can only protect himself, it will not matter whether the Tobacco leaves his premises in a cured state, or just as it is taken from the field. I ought to have said before that in the most favourable localities in the United States the crop is not always a success. Therefore it is reasonable to suppose that there is always a possibility of an increased value being obtained for the English crop, by reason of the occasional short deliveries from abroad. Though we may not have the high degree of summer heat or persistent sunshine peculiar to some countries where Tobacco is largely grown, yet we are happily more or less free from the tornadoes and hailstorms that frequently devastate the Tobacco crops in America and elsewhere."

A CHANCE FOR A COMPANY.

"How do you think the farmer could best be helped ?"

"The best way would be for the Tobacco-growers to unite with capitalists in forming a syndicate, the members of which work together to the promotion of a common end. Not only might further experiments be carried out under their auspices, but when the industry has developed it would offer important advantages, not only as to the curing of the crop and the preparation of it for market, but for generally upholding the right of Tobacco cultivators to get a fair remuneration for their outlay. If a syndicate were established in the way I suggest, and operated upon each year's crop, with the aid of specialists trained for the purpose, there is no question that some excellent English Tobacco would be produced, which would run the imported article very hard. I do not assert that the farmers of Kent and Norfolk are going to turn out Tobacco equal to the finest Havana leaves, but they will undoubtedly produce a valuable article which will largely enter into consumption."

THE TOBACCO DUTIES.

"What is the object of your conference ?"

"We shall probably arrange for a Bill to be introduced into Parliament, with a view to making the cultivation of Tobacco more easy. The measure will most likely aim at removing some of the existing regulations, which are frivolous and vexatious, and at obtaining for a certain number of years a rebate, say of 6d. or 1s. a pound, upon the duty paid on English-grown Tobacco. This slight advantage to the home grower ought to put him on his legs. Parliament, we think, will be inclined to look the more favourably on the proposal because it is in Ireland that the cultivation of Tobacco will probably be on a more extensive scale than anywhere else in the British islands. Experiments have recently been made in Dublin county with the result that the samples of Tobacco produced were highly spoken of by leading manufacturers in Dublin. The soil seems well suited for the growth of the plant. It looks, therefore, as if Tobacco cultivation is going to be a good thing for the Irish people as well as for the English farmer. So far, of course, there has been no money made by those who have carried out the experiments, nor is it likely that there will be until a syndicate takes the matter in hand and developes a promising new industry for the British agriculturist. So far as we are concerned—and we are sure we can say the same of others who have made experiments simultaneously with ourselves—it has been a labour of love. We shall only be too glad if, by any effort of ours, we have helped to draw attention to a source of wealth which has for many years lain dormant, chiefly for fiscal reasons, but which is certainly capable of being revived. Briefly, the question is this. We consume annually some 50,000,000 lbs. of Tobacco. Are we to grow some of it ourselves, as we unquestionably can do, or shall we continue to buy it entirely from abroad ?"

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				
1888. January.	Barometer at 32° and Sea Level.	Hygrometer. Dry.	Hygrometer. Wet.	Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature. Max.	Shade Temperature. Min.	Radiation Temperature In sun.	Radiation Temperature On grass	Rain
	Inches.	deg	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 22	29.894	44 4	43 9	W.	38.4	48.3	43 4	48.8	39.2	—
Monday..... 23	30.331	40.9	40.1	N.	39 3	50.6	38.6	78 3	29.2	—
Tuesday 24	30.454	39.3	37.1	W.	38 9	44.9	37.2	55.7	31.4	—
Weduesday.. 25	30.264	41.2	41.2	S.W.	39.2	46 1	39.1	69.4	36.4	—
Thursday.... 26	29 855	45 4	4 .2	W.	39.5	46.9	40.9	64.5	35.6	—
Friday 27	30.249	34 4	33 6	N.W.	39 1	43.6	31.8	75.2	26.3	.065
Saturday 28	29.975	30 4	28.5	N.	38.2	47 8	28.7	71.8	24.7	—
	30.160	39.4	37.9		38.9	46 8	37.1	66.2	31.8	.065

REMARKS.

22nd.—Dull and damp all day.
23rd.—A lovely spring day.
24th.—Fair morning ; bright afternoon and evening.
25th.—Dull and damp early ; fine and generally bright day ; gale at night.
26th.—Gale all day, abating in the evening ; morning dull and damp ; afternoon generally bright ; clear evening and night.
27th.—Fine, bright morning : cloudy afternoon, with showers of rain and sleet ; bright evening with one or two squalls of rain, hail, snow, and sleet.
28th.—Fine and bright throughout, lunar eclipse, well seen except at intervals between 10.30 and midnight, when fleecy clouds drove across.

Temperature warmer than last week and above the average. Rainfall still deficient.—G. J. SIMONS.

PLAIN WORDS TO SOME GARDENERS.

NO one can follow the career of a gardener for thirty or forty years without becoming acquainted with the educational status of a great number of fellow workers in the craft. Letters of various kinds from various men are received during that time, all indicating the capacity of the writers as correspondents. In several instances marked improvement will be apparent after a lapse of years, showing plainly the results of persevering endeavour in the important work of self-improvement; but in many others there is no appreciable advance on the original low standard of bad writing, bad spelling, and bad grammar. It is lamentable that this should be so, but it is a fact, and it is better, in the true interests of the gardening community, that this should be brought to the surface than ignored as if there were no grounds for the allegation.

That there are well educated men in the ranks of British gardeners goes without saying, and not a few of them have acquired their attainments mainly by their own exertions after their short term of schoolboy life ceased; and this fact renders it the less excusable on the part of others whose lethargy or misapplied time have unfortunately dragged down the average educational standard of gardeners to such a low level. It is nothing less than pitiable that more pains are not taken by illiterate men who have managed to get enrolled in the ranks of professional gardeners to improve themselves in writing and plain education. Not in penmanship alone are so many deficient, for that is perhaps the smallest fault, but carelessness, not to say slovenliness, of expression and outrages in spelling are more to be deplored. How so many men of good appearance and general conduct fail to see their shortcomings in the very rudiments of education is almost astounding. Many readers of these lines must have heard expressions of surprise from educated persons that gardeners with whom they have come in contact—men of fair competency in their calling, respectful in demeanour, and some of them almost dandies in appearance—should betray their scholastic ignorance in a five minutes' conversation; but when this is stereotyped on paper in the form of letters to friends or employers, orders to seedsmen and nurserymen, or in the naming of flowers or other exhibits at shows, the illiteracy is intensified, and in far too many instances deplorable.

The most common excuse on the part of men of "no education" is that it is "not their fault, as they had no schooling." It is certainly not the fault of a man that his parents could not, or did not, send him to school when he was a boy; but it is his fault most decidedly that he did not himself strive in advancing youth and early manhood to spell correctly and write an intelligent letter; and there is positively no excuse for exhibitors at shows making such flagrant and often ludicrous blunders in nomenclature as are so obtrusive and humiliating, for the correct spelling of every name is to be found in catalogues. These names are read over and over again in print, yet when written down are tortured into something of which every gardener ought to be ashamed.

It is quite true that such lazily illiterate men seldom rise to good positions. One here and there may get hoisted above his fellows by a fluke, but in fair open competition he must be left at the bottom of the ladder to grovel along as best he can, grumbling out a lifetime because his "abilities" are not recognised, for the fact cannot be disguised that those who know the least think the most of themselves. Many a valuable appointment has been lost by the misspelt ill-expressed letters of applicants, and many a one gained because of the intelligence displayed by candidates seeking to fill good vacancies in the gardening world.

It is a rule with gentlemen who advertise for gardeners to first cast aside all letters that are obviously written by men who have made no serious endeavour to educate themselves; and it is a rule with nurserymen, too, and other persons who are applied to to supply gardeners, to send the best educated men and otherwise qualified to the best places. This is only natural and right—natural because the patron of a gardener will not incur the risk of receiving a notification of this kind from a customer or friend—"William Hobbs you sent me is a good worker, but very ignorant; he cannot write a label fit to be seen, much less a letter to me when I am from home;" and right, because the man who strives the most earnestly to fit himself in every way for an important charge is the most deserving of advancement; and, moreover, the gardener who educates himself, as not a few of the best have done in grammar, spelling, composition, and other necessary attainments, cannot do so without acquiring information bearing directly on his calling, for when once a course of evening improvement is resolutely pursued the mind is led on step by step from subject to subject, never resting content but ever searching for knowledge, and its possessor of necessity becomes a better gardener and more accomplished man. Much more might be said on this subject, and perhaps will be said by some well qualified correspondents, for it is undoubtedly important, and for various reasons has scarcely had the prominence accorded to it that it fairly demands.—EXPERIENTIA DOCET.

CROPS THAT PAY.

I HAVE said Mushrooms pay, and advised the preparation of the manure and the making of beds at once. I did so because I prefer to obtain manure after Christmas rather than earlier in the season, then make the beds as early as the material can be prepared. I have an object in this, and it may be of advantage to others, and that is the reason I allude to this crop again. There is a tendency in the neighbourhood of towns to use "green food" for horses during the summer, and often well on into the autumn, and the manure from horses fed on this material takes too much sweetening to be agreeable, or to be certain that the crop is going to be a success instead of a failure. Manure that is offensive when the beds are made up is not in the condition in which the spawn will run. The man who can make a good hotbed can make Mushroom beds from which a paying crop can be obtained. Selfishness must be abandoned, for it is the reverse of economy to make the beds too small, thinking of saving outlay in manure by so doing. Such beds cool too quickly, which often means failure. On the other hand they must not be too large, thinking to snatch a "big" yield with but little trouble, for instead of the crop paying it may fail. Extra large beds (I mean too wide and too high; they can be as long as the cultivator wishes) often heat too violently and kill the spawn.

I wish to make my notes as seasonable as I can, and therefore will try to start with those that need first attention. "Do Lettuces pay?" said a neighbouring farmer early last spring when I was busy putting out some thousands of young sturdy plants; "Don't they?" was the rejoinder. He watched them with evident interest, and I tried to induce him to try a few this year by detailing the method I was pursuing. But he has not done so, and I am afraid it is such "dilly dallying" that lands us in the deplorable condition I pointed out in my first article, and makes room for the foreigner to supply our markets. Early Lettuces, if well and quickly grown, are a very remunerative crop. Bear in mind, intending growers, that Cabbage varieties only pay very early before Cos varieties find their way into the market. When once the Cos, or "London Lettuce" as it is called, is in, no matter where it is grown, finds its

way into the market it is difficult to sell the Cabbage, however good or well grown it may be. Hardy Hammersmith and All the Year Round are the two grown. I place very little dependance in these, and only regard them as a catch crop. Those who have sheltered positions, and who reside in moderately dry localities, may do very well with them. I have given up autumn planting, simply because all the plants died. The plants are kept in frames and placed out at the same time as the Cos Lettuces, but the former are planted so that we are certain of a remunerative crop from the ground if we miss the market. Those who go in for marketing must watch the market, for it is no use going with Cabbage Lettuces when somebody else is taking Cos Lettuces. This means 4d. a dozen, perhaps 2d., while your neighbour realises a shilling from the same extent of ground, and with the expenditure of no more labour. I have been caught napping, and selling at the lowest price very soon taught me to watch the market and mend my ways. How I did so will be detailed, but it necessitated some outlay, which I managed to recover the first season, and was very well paid into the bargain. There is no better variety to grow than a good selection of Paris White. Hick's Hardy is hardier, but it needs tying, no small objection for those growing for the market. Veitch's Cos is a favourite, and may take the place of Paris White when the seed is cheaper. But those who want it do as I have done—buy a packet of seed, and if it meets with approval select some of the best and save the seed. Those who wish to make the most of things will be wise in saving the seed of any variety that suits their purpose.

Cos Lettuces to pay should be grown 1 foot apart each way. At a shilling a dozen they pay well, and the grower will not lose much if he has half that price later in the season. Those that have not sturdy plants in a frame to start with may sow at once in boxes in heat if they have glass, and then prick them off into frames; or better still, make a hotbed roughly, place 2 inches of soil over it, and then sow the seed. Do not sow too thickly, and then from this position they can be planted out. Those sown in autumn are pricked out at this season of the year singly into frames, home made, no matter how rough they are—a little protection only is needed.

For these early crops of Lettuce it is natural to ask whether we plant large plots close together, a foot apart in the row and between the plants, and our answer is, Not generally. Although some are grown on this principle, another crop always follows. The best and most convenient method is to plant in rows 2 feet apart, and 1 foot between the plants. Between these French Beans are sown, and when the Lettuces are removed they occupy the whole of the ground. Between young Strawberry plantations we always take Cos Lettuces early in the season. The early crops are planted so that they can be followed by others. Lettuces may be sown until the end of the first week in June, at intervals of three weeks from the time they are first sown outside. At one time we only grew early ones, and left later crops in the hands of others, because we thought they might miss by bolting during hot dry weather. But now that we have south borders and north borders in what was once an open field we manage to have good crops that pay from the north borders during hot summer weather. Our latest crop is from a south border. Our early Cabbages are taken from a south border planted between early Potatoes 2 feet apart. One word more—to grow good Lettuces quickly the ground must be fertile and well manured.

I had not started marketing long before I found that not only must I have Cabbage Lettuces earlier to pay, but Potatoes also to equalise the price of this crop if possible, and to have some of the "plums" I thought foreigners, or somebody else, were getting by supplying the market before I was ready. I was not content with 5s. a hamper (a hundredweight) down to 3s., when somebody else was getting from 8s. to 10s. for the same weight. I also wanted to grow Tomatoes, and had no favourable position outside. At last I succeeded, but how I managed to do so must form the subject of my next contribution.—MARKETER.

THE CULTURE OF HARDY FRUITS.

(*Continued from page 78.*)

THE Peach and Nectarine, as far as cultivation is concerned, may be classed as one fruit, both requiring the same treatment. Of late years the Peach out of doors has been to a great extent very much neglected, and through a variety of causes, but chiefly the unfavourable seasons for some years past, there has been partial or entire failure of the crops. Where good cultivation has not been neglected a fair measure of success has been obtained, which shows conclusively that the bad seasons we have experienced of late years are not altogether the cause of failure. That some places are more favourable for their successful cultivation than others cannot be disputed. Some are naturally well suited to their wants, while others are not, and require to be made suitable if success is desired. The requisites are a well drained substantial soil, a south, south-east, or south-west aspect, a good wall, and a border of about 5 feet well raised up well mulched with manure. The shoots must be thinly disposed, the leaves free from all insects, and the blooms protected from frost, then a good crop of fruit might be annually expected from the greater portion of the country. Glass copings were at one time considered favourable for protection, but the trees are often better without them.

The Plum, Cherry, and Apricot require similar treatment, the Apricot needing the warmest aspect, but all the stone fruit appear to do equally well in the same kind of soil, and that which is rather heavy and contains lime naturally, or which has had it applied, seems to be the best suited to their wants, with the borders kept well mulched and not disturbed in any way after the trees are planted. The wood as it is made should be allowed ample space to receive full share of light, and crowding of the branches and shoots should at all times be avoided. Some think the more shoots the more fruit, but such is not the case, and the contrary is mostly the result. The Morello Cherry is often seen thickly nailed to the walls, and frequently half the fruit falls during the stoning process. Although the Morello bears mostly on the young shoots they should not be deprived of sufficient space. I have seen trees that have been tied year after year each shoot over another until the wall even in winter time was scarcely visible. What a fine cover for insects! The fruit when too thick on the Plums and Apricots must be duly thinned, especially the larger varieties of Plums, if fine fruit is desired.

The Strawberry is an important fruit in most gardens both for dessert and preserving, and is generally fairly well cultivated; and like most other things there is more ways than one of attaining the same end in its successful culture. To obtain good results the necessary labour must not be neglected in the first place. The Strawberry requires a good soil, which should be dug 2 feet deep, adding as much manure as will form a good coating in each trench as it is turned over, and previous to planting should be made very firm. Strong runners layered into small pots and planted out as soon as well rooted make good plants and fruit well the following season. In transferring the plants to their permanent quarters see that they are previously well watered, and in planting the soil should be well rammed with a blunt stick round the plants, and a hollow space be left round each plant to hold water that may be applied after planting if needed. The distance apart can be regulated by the strength of the variety and the kind of soil they are planted in. After planting no disturbance of the soil must take place other than by hoeing to keep down weeds, all runners to be removed as they appear if not wanted. Early in the winter, as soon as frost renders wheeling on the ground an easy matter, a good mulching of long stable manure should be given them, which will answer more purposes than one. I invariably find the finest fruit is produced on maiden plants, and if a plantation is made annually no difficulty will result in obtaining good fruit. In growing specially for preserving the small fruiting sorts it is not necessary that recourse be had to such high culture, as it is a waste of time in trying to grow small varieties to a large size. Small berries with firm flesh are those which are held in the highest esteem for preserving purposes. On very light ground Strawberries (if very fine fruit is required) must be planted annually, as they do not, as a rule, produce such large fruit unless extra means in the shape of watering with liquid manure is bestowed upon them.

The Raspberry is highly esteemed in most gardens for various purposes, and generally succeeds in most soils, but, like the majority of fruits, pays for good culture. Once the ground is properly prepared it need not be moved again after the canes are planted. When planted, the canes should be cut down near to the ground. Various ways of supporting the canes are adopted, but the best way is to have two wires along each row, fastened to stout posts, and if the canes are tied to these, about 9 inches apart, they will have ample room. As soon as the fruit is gathered, the canes that have borne fruit, together with the surplus young ones,

should be cut out, which will give those that are left more room and enable them to get thoroughly matured. A good mulching of manure should be given annually, the old being removed previous to adding the new. The young canes left for fruiting should be shortened according to their strength, and duly tied to their supports, or the wind may snap them off.

The Currant, Red, White, and Black, have their various uses, and are not difficult to cultivate, but where they are judiciously attended to better results are obtained. Whether grown as bushes or trained to walls, the Red and White sorts should be kept to rods far enough apart to admit light to the fruit, the young shoots should be pinched in summer and spurred back in winter; the Black, which has its fruit chiefly on the young wood, requiring only to be kept well thinned out to prevent the branches getting too much crowded together.

The Gooseberry should be treated in much the same way as the Black Currant, as I believe more fruit can be had than by spurring the shoots, and as a portion of the crop is usually taken in a green state the trees are not as a rule overtaxed. The caterpillar plays sad havoc with the trees at times, and requires to be looked after or much mischief is done. I have known the cuckoo to materially assist in this matter. If trees are planted against walls the rod system, kept spurred, answers best, for when the rods are well secured to the wall the spurring back is a simple matter.

The Fig forms a good addition to the dessert where it is successfully cultivated, but it does not succeed in all parts of the country out of doors. They require an extra moist soil to grow in, and plenty of sun to ripen both fruit and wood. Short-jointed wood should be encouraged all over the tree and allowed plenty of room, keeping all small, useless shoots cut out, and the strong ones leave their full length, as it is at the point of these that fruit may be expected.—W. Simpson, *Knowsley*.

PLANTS AND FLOWERS IN THE HOUSE.

THE DINING ROOM.

One feature in decorating dinner and breakfast tables, which is very satisfactory, and a long step forward, is the simplicity which is now permitted, and not only permitted, but I may almost say, sought after. Before beginning to write this I had the pleasure of arranging a table laid for fourteen persons, yet I carried the whole material, plants and flowers, in a small basket. The arrangement of the table was thus—a tall seven-branched candelabrum in the centre, with two smaller candelabra at each end. Between the plates, &c., and the candelabra were dessert dishes, one dessert dish on each side, opposite and between the middle and end candelabra, with a dish at each end corner. In the middle of the table, just clear of the centre candelabrum, and between the first-noted dishes, a silver vase with a tall Dracæna was placed on each side. Round the base of the middle candelabrum a group of plants was arranged, comprising two Grasses and two plants of Asparagus. The open spaces were then filled with fronds of Parsley—so good, however, as to be like a beautiful Todea, then five small Maidenhair Ferns, in thumb pots, were set amongst these; a little Selaginella lightly covered any bare portions. Four or five crimson Tulips dotted amongst as many Chrysanthemum blooms, and some sprays of Coronilla glauca running to the cloth completed this portion. A small group at each side was then arranged between the end candelabrum and the silver vase with the plant. These were composed of small plants (in thumb pots) of Cyperus alternifolius, the pots hidden among Selaginellas and a few crimson Tulips and white Chrysanthemums. On two occasions in December very large blooms of Chrysanthemums were used. In one instance light coloured varieties, and in another dark ones. The light blooms had a ground of dark velvet, the dark ones yellow plush. About twenty to twenty-four blooms sufficed for a large table, a few good fronds of Maidenhair Ferns being the only other material used. The effect in both cases was really excellent, the more effective of the dark kinds being Cullingfordi, Jeanne Délaux, Triomphe de la Rue des Châlets, a very soft and pleasing shade; and Janira, which shows crimson by candlelight. Of the light sorts, Snowstorm, Fair Maid of Guernsey, Gloriosum, Golden Empress and Bronze Queen were finest. The flowers we cut with good stems and foliage, so that there was no waste with them. One good feature with large Chrysanthemums is that they are altogether free from that coarseness of appearance which some people find in large Dahlias. I am sure that large Chrysanthemums have only to be tried as cut flowers to be appreciated.

Another pleasing arrangement we had lately was composed of small leaves of Rex Begonias laid on the cloth and flowers of B. semperflorens and B. s. rosea laid on each leaf, draping these with a small piece of Adiantum gracillimum. In autumn we had some arrangements with berries, the common Barberry, Snowberry, Elderberry, Rose heps, Haws, Hypericum, Winter Cherry, and Sea Buckthorn. As an example—some long drooping shoots covered with bright Barberries were inserted among the branches of the candelabra and drooped over and twisted round the stalk; a few of Snowberry, and a very little Elderberry were added. Round the foot of the candelabra large bunches of Elder were disposed with a good quantity of its foliage. Among these sprays of Snowberry, and perhaps a few Rose heps. Single berries of Barberry and Elder were placed here and there on the cloth, but so as to appear to have dropped from the candelabrum. The smaller candelabrum was treated in the same manner, but with less material. In other cases merely a few haws and foliage, with Rose heps also with foliage, were laid on the cloth. The fact is, flower and fruit and foliage are all so beautiful that we may arrange them as we please, and we can hardly fail to make them acceptable. At the same time it must be conceded that when elaborate arrangements, and only the "best" flowers are permitted, we are forced to come to the conclusion that there is much labour expended, great expense in waste of flowers involved, and no better, nor perhaps even such good effects secured as the result. Who would not rather attack and rob some hoary Beech of his copper leaves, or trim some coloured foliage off his Carrots, or even, if need be, select a few claret-coloured Vine leaves, and make sure of giving equal satisfaction with employing some of his most cherished blossoms? It only remains to add that it is of absolute importance that thorough cleanliness is observed in all the work in connection with table decorating. Not a speck of dirt should be left on the cloth, nor for that part, on the carpet either. And when glasses are in use they ought to be kept perfectly clean, and the clearest water only used.—B.

EUCHARIS CULTURE.

Your correspondent, "M. D.'s," estimate of the cultivation of the Eucharis in this country is sad, and depressing to reflect upon. He writes, "Few sights are more familiar when visiting gardens than to see in some out-of-the-way corner of the stove or forcing pits a number of over-potted sickly Eucharises. In most cases a great amount of labour has been bestowed upon them, but all to no purpose. The mite has attacked the bulbs, and they will never be any good." A melancholy statement this. But there is good cheer in store, as "M. D." informs us he "writes to tell his readers of an easy method which he has seen successful in restoring plants to vigorous health after years of languishing." With reference to the mite, it seems your correspondent is of a doubting cast of mind, and has no hesitation in boldly asserting, "If there is really such an insect (as the Eucharis mite) he has never yet made its acquaintance," and asks to be "pardoned for doubting its existence." It is quite possible that "M. D." has never seen the Eucharis mite, but it would not alter the fact that it does exist if he were never to see it.

It is some four years since I first saw the mite in question, and I have no wish to see it again. I ordered a dozen flowering bulbs of E. candida from a well-known nurseryman, and after keeping them for a year they seemed to make little progress in growth, although they had the same treatment in every respect as the large plants of E. amazonica, which are not placed in an out of-the-way corner here as described by your correspondent, but grown in the centre of a large span-roofed house, where they receive abundance of light from all sides. I had the pots taken out of the house and the bulbs shaken out of them for examination, and it did not require a very keen eye to see that they were infested with mite. I was afraid if I kept the bulbs to experiment upon in killing the pest it might find its way to the healthy plants of E. amazonica, and I gave orders for them all to be taken to the stokehole and thrown into the furnace.

There is something remarkably strange about the culture of the Eucharis without taking the mite disease into consideration. I know several places where it grows well and flowers freely without any very particular attention being paid to its culture. I also know other places where it will not thrive and grow satisfactorily under any kind of treatment. As an instance of this, I know a friend, who is reckoned one of the best gardeners in the country, yet, with every appliance for good culture, he could not get his Eucharises to grow vigorously, although he tried every method he could possibly think of, and it could not be said that his plants were placed in out-of-the-way corners, or received bad treatment, as they had a house entirely devoted to themselves. My late foreman, who lived at the place once, told me that he had seen more flowers at one time on a single plant here than he had seen the whole houseful of plants produce during the three years he was there. The plants in question were potted in different kinds of soil, plunged in bottom heat and unplunged, shaded, &c., but still they would not grow satisfactorily.

Your correspondent, "M. D.'s," easy mode of procedure, or rather the method which he has seen successfully adopted to restore languishing plants to vigorous health, is as follows :—"At any time when a gentle bottom heat can be obtained, shake the plants out of their pots—they ought to be dust-dry at the time—placing the bulbs in separate sizes for potting. Pot them firmly in a compost about equal parts of peat and loam of a sandy nature, and enough soot to show itself all through the compost. Water slightly, and plunge the pots, or place them on the top of the hot-bed. Keep the heat up to about the ordinary stove temperature. It is surprising how little water the Eucharis requires at any time, and it is far better practice to err in giving too little than too much." The above is the sum and substance of "M. D.'s" advice in restoring languishing plants to vigorous health. I must confess that I fail to see where the "better practice" comes in, or how languishing plants can be restored to vigorous health by giving too little water, and would advise all who grow Eucharis to err neither in the one way nor in the other, but to give the plants sufficient water at all times when they require it.

The Eucharis plants here must differ very much from those "M. D." writes about, as they "require" and receive a good watering three times a day during the hot weather in summer, and a heavy watering every day during the winter. They are never allowed to become dust-dry at any time, or indeed anything approaching to it. The plants receive the same treatment all the year round as regards heat and moisture, and are never subjected to a lower temperature, or allowed to become dry at the root. They are grown in heavy yellow loam, with no other mixture except a little leaf mould, river sand, and charcoal, and they grow remarkably strong in this, producing leaves from 2 to 3 feet in length, and they flower abundantly two or three times during the year. I think many people err in potting the plants too often and in too light soil, resting them in a low temperature, and in not giving them sufficient water when they require it.—A. PETTIGREW, *Cardiff*.

EARLY MELONS IN POTS.

THIS mode of culture is perhaps not practised so much as it ought to be, especially by those who wish to obtain early fruits of medium size, and who have only a small space allotted to them for that purpose. We practised it here for the first time last season, and as the result was most satisfactory we intend doing so again this year. The seed was sown at the same time as that of the Melons planted out, and the seedlings were grown under the same treatment as recommended on page 5. We employed ordinary Seakale pots, these being preferred on account of their depth, as when placed on the pipes close to the path they elevate the plants nearer to the glass. By following this system we were able to obtain from one plant two fruits weighing 2 to 3 lbs. each, and occupying the small space of one wire about 3 feet long, and a little earlier than these planted out.

The pots were filled with the same compost as recommended on page 5, and made firm, care being taken that they were well drained with clean crocks, covering them with some good decayed manure, the pots being left about three parts full, for I consider that the roots being confined in such a small space they require a little extra encouragement in the way of a top-dressing when their fruits are swelling. In a few days, when the roots were found to have passed through to the sides of the 5-inch pots, they were planted, making the compost firm, and leaving a small mound around the stems. A stout stake was placed in the pot and secured to the wire it was intended to train them to. All side shoots were pinched off to one leaf from the stem up to the one nearest the wire. They were then allowed to grow, and the leader trained along the wire until it reached the next plant, and then it was pinched out. As soon as two flowers were open together they were fertilised, and as the fruits commenced swelling liquid manure was supplied, and a dressing of rich compost was applied, the growths being stopped at one leaf past the fruit, also picking off all flowers as they appear, as this greatly helps the swelling of the fruit. On several of the plants we succeeded in procuring a second crop of small fruits, all being of first-rate flavour. Sutton's Imperial Green Flesh and Thames Ditton Hero proved most valuable for this purpose.

I would like to add a few remarks here about syringing Melons, as this should at all times be done with great care, always taking the weather into consideration. On a fine morning, and the day likely to prove sunny, syringe freely, the water being at the same temperature as the house. If in the morning the temperature is found to be rather low, syringing should be delayed until it has risen to its proper height, as if done when at a low temperature it is likely to cause a chill to the Melons and produce decay in the growths. If this happens, the affected parts must be rubbed with quicklime and soot, or it will quickly spread, and probably cause the ruin of the plant. Melons should never be syringed so heavily in the afternoon when closing the house, and then only on bright days, but take care to well damp the floors and walls in the afternoon and evening, so as to cause a moist atmosphere, or otherwise insects will soon become troublesome.

I have often seen it advised to dry Melons when ripening their fruit, thereby causing the loss of most of the foliage. This I do not agree with ; that method, as I think, instead of adding to the flavour it takes it away. I like to give just enough water without manure to keep the foliage from flagging, and then expect my fruit to be of a good flavour. I may add that we grow Melons and Cucumbers in the same house here, and with success, always choosing the sunny side for the Melons, and of course the Cucumbers get the most syringing. In my reference to hotbeds on page 5, the width should have been stated to be 2 feet wide.

In conclusion, I wish to thank "Spectator" for his kind remarks on my scribbling (page 44). I assure him that if I can prove of service to some of my fellow workers, the object I aim at will be accomplished, which will well repay—P. T. D.



VANDA TRICOLOR.

I FIND this beautiful species of easy culture, no Orchid in our collection being more so in fact. My first pair of plants came from Drumlanrig, and were fairly strong well rooted pieces. They have been in our possession for about six years, and during that time the stronger of the two has only missed flowering once. Each is now strong and healthy, and in addition to the annual growth of a few good leaves, several suckers are pushing from the base. A third plant has been added to our number, this being about 40 inches high and very robust. Strange to say it has never flowered, and in all probability that is the reason we got possession of it. What this Vanda appears to require to root in is either a perforated pot or basket filled with large pieces of charcoal, broken crocks roughly broken, brown fibrous peat, and sphagnum in about equal proportions. Such a mixture is not easily soured, and the coarse roots ramble among it at their will. It is immaterial whether a surfacing of sphagnum is given or not, but our plants thrive as well without it as others seem to do with. No drying is ever attempted, the plants simply receiving water when they appear to need it, or much the same as the majority of ordinary pot plants are treated. Many succeed in raising fine healthy plants, but cannot get these to flower, simply owing to keeping them in a very high temperature. Even the ordinary plant stove is too hot for them, as I found on placing a plant with the Cattleyas for a time. It grew strongly, but refused to flower. Where ours succeed is on the front staging of a fernery, this being covered with thick rolled glass, and also freely shaded during the hottest part of the year. The temperature during the winter ranges from 50° to 60° by day and frequently as low as 45° by night. This just suits the Vandas, these giving two or three strong spikes of flower each season, usually in the spring. Very beautiful they are, too, and, kept in the house where grown, they retain their beauty for several weeks.—W. I.

DENDROBIUM HILLI.

THIS is an evergreen Australian species named in honour, I believe, of Mr. C. G. Hill, Arnot Hill, Nottingham, who possesses a very fine specimen. It is similar in style of growth to D. speciosum, but the pseudo-bulbs are much longer. Two remarkable plants are at present in flower in Mr. C. M. Major's conservatory at Cromwell House, Croydon, under the management of Mr. W. Wright. They are grown in large baskets with peat and sphagnum, and during the period of growth they are subjected to a fair amount of heat and moisture in the stove, after which they are well rested in a cooler and drier atmosphere. The growths made last season now measure 18 inches in length and are 7 inches in circumference, producing on each three long and graceful racemes averaging sixty blooms each ; the sepals and petals are creamy white with a throat of the same colour and spotted with purple.—G.

LÆLIA ANCEPS SANDERIANA.

THERE would appear to be varieties of this extremely beautiful Orchid. Two such are now flowering in the fine collection belonging

to A. Wilson, Esq., of Westbrook, Sheffield, and both are very beautiful, but distinct from each other. The finer of the two is a noble specimen about 30 inches across and has produced five flower spikes, one carrying five flowers and the remainder four each. The individual flowers measure 5 inches in diameter, are very stout in texture, the petals 1¼ inch broad, and the colour of both petals and sepals of the purest waxy white. The lip is of large size, the colour a white ground pencilled with crimson in the throat; the column a pale primrose yellow, and a small blotch of magenta at the tip.

The other variety is also very fine, but not quite equal to the foregoing. Flowers from this plant were a year ago sent to Reichenbach, and were described by him as an extra good variety of L. anceps Sanderiana.

In the same collection as the foregoing are many other good Orchids now flowering, amongst them being a very fine plant of Cattleya Trianæ alba, with extra large flowers beautifully fringed and of the purest white throughout, except a faint tinge of yellow in the throat. The following were also in flower:—Cypripedium œnanthum superbum, most richly coloured and having two flowers on one stem; C. Boxalli, a large plant with nine flowers; C. Lawrencianum, C. Haynaldianum, and a unique variety of C. villosum; Ada aurantiaca, with six flower spikes; Oncidium cheirophorum, very pretty and sweet scented. Odontoglossums were numerous, including some fine varieties of O. crispum, O. Pescatorei, O. Insleayi leopardinum, O. Halli, and others. A plant of the latter was carrying eighteen flowers on one very long spike. Other Orchids were Masdevallia Lindeni superba, Vandas tricolor and suavis, Cymbidium giganteum, Dendrobiums Wardianum and nobile, the latter densely bloomed large specimens 3 feet in diameter, and a number of plants of the pretty orange coloured Lælia harpophylla.—W. K. W.

ORCHID FLOWERS.

From The Grange Gardens, Carshalton, we have received a few flowers of the following useful winter-flowering Orchids:—Cœlogyne cristata maxima, large, pure white, with a golden centred lip; C. Lemoniana, with a spike of seven flowers, pure white, with a lemon centred lip; Lælia anceps in three varieties, all very good, but one especially rich both in the sepals, petals, and lip; Dendrobium Wardianum is represented by several varieties, differing considerably in the size and colours of the flowers; Phalænopsis amabilis Dayana has the two lateral lobes of the lip heavily streaked with crimson at the base and a few similar dots in the two lower sepals; Odontoglossums are represented by O. Rossi majus, very strong and of dark colour, four flowers to a spike; O. odoratum, large and well coloured; O. Sanderianum, lighter in colour, with a white lip, but equally as fragrant as O. odoratum; the pretty O. Oerstedti majus, one very fine single flower, and two flowers on one stem; and O. madrense, which has been in flower for three months. There were also flowers of the interesting Helcia sanguinolenta, with narrow brownish mottled sepals and petals, and a crisped lip streaked with purplish crimson on white; and the neat but not showy Lycaste Smeeana.

FREESIAS GROWN FROM SEED.

After reading your notice in the *Journal of Horticulture*, January 26th, your readers may be interested to know how easy it is to grow the Freesias from seed and to flower them within the year. On receiving the seed it was sown late in January, and the pan placed in heat. When the seedlings appeared they were pricked into pans and grown near the glass in an intermediate house. When large enough the little bulbs were placed in 5-inch pots, the compost being loam, leaf mould, and silver sand. Plenty of sun and air were admitted, and the plants were in flower before Christmas, but have bloomed more freely since, and are still beautiful. Bulbs potted in January, 1886, flowered a week later, but were stronger. The flowers of the seedlings were not pure white, but all deliciously scented.—Edwin Price, *Gardener, Lower Sougnton.*

SIX GOOD ONIONS.

The friend who suggested to me that "six good Peas" would be an interesting subject to readers of the *Journal of Horticulture* has caused me to think that a selection of six of the best vegetables in general classes would help to reduce the hosts of varieties to a serviceable limit, and Onions are my second topic. I know thirty varieties of Onions, or perhaps I had better say Onions under thirty names, and the best of them may be included in six good varieties. Cultivators, almost without exception, have a hankering after large Onions. I daresay if anyone advertised an Onion that would attain a weight of 6 lbs. or 8 lbs. the stock would be exhausted by return of post; but although very large Onions are attractive for exhibition, medium sized bulbs are the best for keeping and the most acceptable in the kitchen. Indeed for profit and satisfaction I would rather have a crop of bulbs averaging in weight from 6 ozs. to 8 ozs. than others weighing from 14 ozs. to 20 ozs.

Webb's Banbury.—I have grown varieties annually under the name "Banbury" ever since I was responsible for the production of a supply of Onions. Some I have found globular, others conical, straw coloured, red, and white. The true Banbury is rather flat with a good round shoulder, a very small neck, and of a clear straw colour. They grow very uniform in size, yield a great weight to a given space, and are in season from July to March. The selection offered as Webb's Banbury, which I have had from Wordsley, Stourbridge, for the last ten years, is the finest and most profitable type I have ever been able to procure, and as a main crop Onion I know none to surpass it. Years ago I asked a friend of mine, previous to an important exhibition, "Would a dish of spring-sown Onions count as much in a collection as a dish of autumn sown?" The reply was "Yes, if they are good." I then staged a dish of typical Banburys, was successful, and since then the same thing has been repeated, as quality often counts more than mere size. But at the same time the attention given to some sorts to bring them up to 1 lb. or 20 ozs. would bring Webb's Banbury uncommonly near these marks.

Trebons.—This is a good type of Onion. It is quite different from the preceding. It is very conical in form, and tapers sharply from the root to the widest part and again to the stem. When true it is a pretty Onion and bears heavily. In an ordinary way the bulbs will average 8 ozs. or 9 ozs., and by a little extra attention they will weigh 12 ozs. and 14 ozs. It may be sown in either autumn or spring, and in both cases it is sure to give satisfaction. I have sometimes seen it much mixed, many bulbs being white and others red or purple, but the true colour is a clear straw, and those who keep it perfectly true would find their labours much appreciated.

James' Long Keeping.—I freely include this variety, because it is the best keeper of all Onions. You may do as you like with some sorts and find it impossible to keep them sound until April, but in the case of James' it is the easiest of matters to keep them sound and good as late as May, and they fill the gap in the supply which is apt to occur from the time ordinary sorts are finished until the autumn-sown ones are ready. It is not a show Onion, neither would I grow it for autumn and early winter use, but for spring and what might be termed early summer it is excellent, and in keeping qualities it may be said to be unique.

New Queen.—I name this for two reasons. It is the quickest in growth of all varieties, and in cases where Onions are scarce in spring it may be sown and grown to come in before all others. It is very useful in June and July, or from the time the last of the spring Onions are finished until the new crops come in. Its other good point is that it may be used for pickling, and on this account it may very well be included in all collections.

Veitch's Main Crop.—This is the newest Onion I have named and it has proved so good as to merit being named and I recommended here. It is very globular, and appears to be a cross between a flat variety and one conical in form. It grows freely, bulbs well, is exceedingly true in form and colour, and is a very heavy cropper. Grown with about twelve others it was distinct from them all, and the quality was so good as to attract general attention.

Giant Rocca.—This is undoubtedly the best variety for sowing in the autumn for the main crop of this class. It is well known and need not be described at any length; but although many have been recommended as being superior for autumn sowing I have not found them so, and for table use or exhibition the Giant Rocca still stands at the top of the list.—J. Muir, *Margam, South Wales.*

THE NEWCASTLE AUTUMN SHOW.

With somewhat questionable taste Mr. Goodacre, in the Journal for last week (see page 82), attacks some of the fruits exhibited in the collection of fruit that won the Jubilee prize for fifty dishes at the Newcastle Show last August, and holds up to derision "Warner's King" Apples and "Green Citrons." Being present at the Show I took particular interest in these huge collections, especially in the first prize lot, but failed to see either Warner's King Apples or Green Citrons. Is Mr. Goodacre not mistaken in this matter? Beurré Diel there certainly was in Mr. Hunter's collection, and such Beurré Diels too as one rarely meets with, weighing some 18 to 20 ozs. each. These I have seen growing at Lambton in an early Peach house, therefore were not the despisable things Mr. Goodacre makes them out to be. We do not always see ourselves as others see us, and upon looking over Mr. Goodacre's collection that was awarded the third prize I was much struck with what appeared to me to be three dishes of Louise Bonne of Jersey under as many different names. No. 1 was the genuine Louise, as one would expect to find it at the end of August when grown out

of doors in the midland counties. No. 2 was a larger and finer-looking fruit that had apparently gone through some preparation for the occasion, while No. 3 was a dish of very small Pears, and almost unrecognisable. I am not the only person who noticed these Pears, and freely commented upon them at the time. Can Mr. Goodacre give satisfactory proof that the eight dishes of Pears in his collection were distinct varieties? One thing there can be no doubt about—viz., that the market value of Mr. Hunter's dish of Beurré Diel was worth more than all Mr. Goodacre's eight dishes put together, at least such is the opinion of—AN OLD HAND.

Notes & Gleanings

EVENTS OF THE WEEK.—Tuesday next, the 14th inst., will be an important day at South Kensington. The Fruit and Floral Committees of the Royal Horticultural Society meet as usual at 11 A.M. in the Conservatory, but at 3 P.M. the annual general meeting will be held in the East Crush Room of the Royal Albert Hall. The principal business will be to receive the report of the Council and Auditors, elect Council and officers, and the election of new Fellows. On the 13th inst. the National Chrysanthemum Society will hold a meeting at Anderton's Hotel, Fleet Street, to consider the proposals respecting a provincial show this year and the production of a catalogue of Chrysanthemums. Sales of Orchids will be held at Protheroe's Rooms, Cheapside, on Friday and Tuesday, and at Stevens' Rooms, King Street, Covent Garden, on Thursday.

—— THE WEATHER.—"B. D." writes—"The week commencing the 30th ult. began with wintry weather, and ends with spring-like mildness. Frosts of 6° to 8° and snow showers marked the first four days, since then the thermometer has stood on two nights at 45°. Spring flowers have made a leap during these last three days, and now Snowdrops, Crocuses, Hepaticas, and Primroses may be seen in bloom. On the morning of Thursday last about 5 o'clock a somewhat alarming shock of earthquake was experienced in many districts in Scotland, most violent in the line of the Caledonian canal." On Thursday morning in the neighbourhood of London the frost was severe, 12°, 14°, and 16° below freezing point being recorded. Since then the weather has been much milder and more open with several bright sunny mornings.

—— "DUCKWING" writes—"Now that everyone is writing about the relative merits of NEWER VARIETIES OF PEAS, it may be worth mentioning that of the eight or nine varieties which I grew last year, so remarkable for drought, the only one which produced a good crop was the old Oxford Tom, the seed of which I bought from a cottager."

—— WE have received the first part of a re-issue of "CASSELL'S POPULAR GARDENING," of which we have previously spoken in approving terms. To those who do not already possess this useful book, the present is a favourable opportunity for them to begin taking it.

—— MR. B. S. WILLIAMS, Upper Holloway, sends blooms of PRIMULA SINENSIS MAGENTA QUEEN, a new variety being sent out this year. The flowers are of excellent shape and substance, the colour being a rich rosy magenta. It is an effective and handsome variety.

—— MR. J. TRESEDER writes on PACKING FRUIT:—"I have read your correspondent "R. W.'s" criticism on Mr. Pettigrew's method of packing mixed fruits, which he finds fault with, but he advances no theory himself on the subject, and it certainly would interest the readers of the Journal to know the method "R. W." adopts, and the material he uses in packing his fruits after an experience of no less than forty years."

—— *The Kew Bulletin* for February is devoted to SEEDS OF HERBACEOUS PLANTS, and it is stated that "these seeds are available for exchange with colonial, Indian, and foreign botanic gardens, as well as with regular correspondents of Kew. But the seeds are for the most part only available in moderate quantity, and are not sold to the general public." About 3200 names of species and varieties are given, nearly eight pages out of twenty-five being occupied with the Compositæ. The authorities for the names are given, together with the native countries and the principal synomyns. It constitutes a useful reference list.

—— FROM M. Maxime Cornu of the PARIS MUSÉUM D'HISTOIRE NATURELLE we have also received a list of seeds, which comprises in seventeen large pages over 5400 names of Ferns, Grasses, and miscellaneous plants. More than 180 Ferns are named of which spores are in stock, presumably for distribution to other botanic gardens. The botanical authorities only are given with these names, though "Bot. Reg." and "Bot. Mag.," which appear connected with some names in this way, seem rather curious. In noticing Mr. R. I. Lynch's list of seeds from the Cambridge Botanic Gardens recently it might have been stated that about 1400 species and varieties were enumerated.

—— THE ROYAL SOUTHAMPTON HORTICULTURAL SOCIETY have issued their report for the year 1887, of which the following are the chief points:—The past year has not been so prosperous for the Society as the Council could desire, the many calls upon the public and the counter attractions in connection with the Jubilee celebrations no doubt materially affecting both the subscriptions and the attendance at the shows. The principal reason for the decrease in the receipts is, however, more immediately due to the railway company failing to run the usual excursions to Southampton on the August Bank Holiday. On former occasions these excursions have brought many thousands of visitors into the town. The Council have, therefore, little doubt that by this omission on the part of the Company the Society lost from £80 to £100. The shows of the Society last year fully maintained their reputation, both by the extent and the excellence of the specimens exhibited. At the Summer Show the fruit exhibits were pronounced by the judges and the horticultural press to be the best seen at any provincial exhibition last season. Considering the Society had to depend entirely upon local support, as already explained, the attendance on the two days, over 20,000 persons, is evidence that the Society's Great Summer Exhibition and Fête still retains its popularity as the event of the year. The Autumn Show, with the exception of the afternoon of the first day, was very well attended, considering the very unfortunate weather, and the exhibition, although held upon an early date, was one with which the Council had every reason to be satisfied, both as regards the entries and the quality of the fruit, flowers, and birds shown. The next Summer Show is fixed to take place as usual on the August Bank Holiday and the Saturday preceding it, and the Autumn Show on the 6th and 7th of November, provided the funds at the disposal of the Council warrant the latter being held. The Council cannot conclude this report without alluding with the deepest regret to the death of their late greatly respected colleague, Mr. W. C. Westlake. The active interest which that gentleman took in the welfare of this Society will cause his loss to be greatly felt. The Right Hon. Baron Montagu having expressed a desire to be relieved from the office of President, through ill health, the Council has obtained the sanction of W. H. Myers, Esq., J. P., of Swanmore Park, to allow his name to be placed in nomination for the office. Mr. Myers is well known as a successful exhibitor, especially of Chrysanthemums, at the exhibition of this and other societies.

—— GARDENING APPOINTMENTS.—Mr. E. Shephard, late head gardener to the Misses Bannerman, Roden Hall, Wellington, Salop, has been appointed head gardener to N. Eckersley, Esq., Standish Hall, Wigan, Lancashire; and Mr. R. Sharpe succeeds Mr. Raffill as gardener at Low Hill Gardens, Bushbury, Wolverhampton.

—— CHISWICK GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION.—On February 22nd E. W. Badger, Esq., Birmingham, will deliver an address "On the Advantage to Gardeners of a more thorough Knowledge of the Science as Contrasted with the Art of Gardening." The same gentleman has also kindly promised to discuss later on the most important question of the raising hardy fruits, Apples and Pears particularly, to bloom later than most of our existing kinds do, so as to escape or minimise the effects of our late spring frosts. The latter subject will chiefly consist in the presentation of two ideas—(A) That most of our hardy fruits bloom at a time when spring frosts prevail, and are rendered barren for the year because the frosts destroy the year's promise. (B) That the obvious remedy is to commence at once, and by systematic hybridisation with the right kind for male and female parents to originate sorts as good as we now possess, which will bloom a little later, and so run less risk of damage from the late frosts.

—— A MEETING of the ROYAL METEOROLOGICAL SOCIETY will be

held at 25, Great George Street, Westminster, on Wednesday, the 15th instant, at 7 P.M., when the following papers will be read :—"Electrical and Meteorological Observations on the Peak of Teneriffe," by the Hon. Ralph Abercromby, F.R.Met.Soc.; "Rainfall of South Africa, 1842-1886," by W. B. Tripp, M.Inst.C.E., Fr.Met.Soc.; "Some Methods of Cloud Measurements," by Nils Ekholm. The Council this Society have also arranged to hold at the same place on March 20th to 23rd next, an exhibition of apparatus connected with atmospheric electricity, including lightning conductors, photographs of lightning and damaged objects. The Committee will also be glad to show any new meteorological instruments or apparatus invented or first constructed since last March, as well as photographs and drawings possessing meteorological interest.

—— THE schedules of the ROYAL BOTANIC SOCIETY'S SHOWS, REGENT'S PARK, in the present year are now issued, and contain liberal provision for plant exhibits. The Spring Shows will be held on March 21st and April 18th, the prizes ranging from £3 to 10s. for bulbs and forced plants, eighteen classes being devoted to the first Show and fifteen to the second. The Summer Shows are fixed for May 16th and June 30th, thirty classes being enumerated for the former and fifty-eight for the latter, which besides plant classes includes twelve for cut flowers and sixteen for fruit. At the June Show some alterations have been made in the classes for Orchids; thus, there are now two for twelve exotic Orchids from nurserymen and amateurs, two in the same way for collections of Dendrobiums and Cypripediums, and one open class for a collection of Masdevallias. These may be expected to form very interesting features. At the May Show there are also classes for Cattleyas and Lælias, and at each Summer Show a class is devoted to greenhouse Rhododendrons.

—— CALLICARPA PURPUREA.—"J. H. L." writes: "Mr. Miller, gardener to Lord Foley, has this useful though rarely seen berried plant in profusion in the well-kept greenhouses at Ruxley Lodge. He recommends the following mode of culture :—Cuttings should be struck of the old cut-back plants in the spring and treated the same as a Fuchsia. Pot in a compost of loam and peat and a little sharp sand. Place the young plants in house or pit at a temperature of 70°. They should be constantly pinched back, and no shoots forgotten, until the beginning of August. Give them plenty of air, but more especially when they are in flower."

GARDENERS' ORPHAN FUND.

FOR the information of your correspondents who evince so warm an interest in this fund, and to whom I feel deeply grateful, I shall feel obliged if you will kindly allow me to state that the question of money boxes was considered at the last meeting of the Executive Committee, with the result that sample boxes are to be presented at the next meeting for approval. A number of boxes of the approved pattern will then be ordered for distribution among such of our friends as will kindly undertake the charge of them.—GEO. DEAL, *Chairman.*

AT the annual meeting of our Chrysanthemum Society, held on Friday night last, it was resolved to arrange for a concert to be held on April 5th in aid of the Gardeners' Orphan Fund. If the committees of other societies in the country should think of assisting in the matter, I shall be glad if they will communicate with me on the subject.—A. J. BROWN, *Lindfield, Sussex.*

[We are glad to observe the Lindfield Society is in a sound financial state, and to learn that it will be well supported. We also readily publish the above resolution formulated by our correspondent.]

A LITTLE CHANGE.

HAVING been engaged in trade for several years, and by, I trust, fair dealing and fair advertising, established what is regarded as a good business, I can afford to allude to what are known in the circle as "puffing pars." The public form a true estimate of "news" which they see clearly enough is "supplied." These "little pars" were novelties once, but the market has been overstocked and the game is played out. But even yet they are "sent round" now and then, and one creeps into print here and there—a mere flash in the pan—for it is clear enough the shot has been withdrawn, because the flashes are not alike in all the papers that let them off, and does this not betray the hollowness of the whole thing?

When I see these "little items" I am always reminded of Bob Sawyer's method of advertising as described in "Pickwick." "Don't you see," said Bob, "he goes up to the house, rings the area bell, pokes a packet of medicine without a direction into the servant's hand, and walks off. Servant takes it into the dining parlour; master opens it and reads the label—draught to be taken at bedtime—pills as before—*the* powder. From Sawyer's, late Nockemoff's. Physicians' prescriptions carefully prepared, and all the rest of it. Shows it to his wife—*she* reads the label; it goes down to the servants—*they* read the label. Next day the boy calls. Very sorry—his mistake—immense business—great many parcels to deliver—Mr. Sawyer's compliments—late Nockemoff. The name gets known, and that's the thing, my boy; bless your heart we have one four-ounce bottle that's been to half the houses in Bristol and hasn't done yet." Dare you insert this, Mr. Editor?—PROVINCIAL.

[Certainly; why not? You evidently think it as interesting as some other paragraphs, and if it pleases you it may please others who like "a little change" in literary fare.]

ERICA ODORATA.

ONE of the pretty spring-flowering Heaths that are now too seldom seen in greenhouses is Erica odorata represented in fig. 16. The



Fig. 16.—Erica odorata.

flowers are bell-shaped pure, white, gracefully supported on slender footstalks, and possessing a delightful fragrance which has been compared to "a compound of Roses and Honeysuckle." It is an old inhabitant of English gardens, having been introduced in 1784 by Mr. John Wedgewood, but though usually found where collections of hardwood plants are prized it is now comparatively scarce. It is, however, well worth the attention of cultivators.

IMPRESSIONS AND OBSERVATIONS.

IN devoting a few moments' consideration to some points recently advanced in the Journal, I do so in response to wishes that have been expressed, and in this instance my subjects have been chosen for me. The first on which observations are requested is that of noble and other owners of private gardens competing with market gardeners in catering for the multitude of consumers of produce, which both class of traders grow for sale. I will try to look at the matter calmly and without prejudice, but at the same time shall be obliged to call a spade a spade whosoever may be its user, and in doing so shall have to admit myself a

superannuated cattle drover before I am done, and if I am not ashamed to admit this I do not see why anyone who is a market gardener should object to be called one.

THE paragraph to which my attention is directed is the following—"Personally I do not see why a gentleman should be thought mean if he disposes of his surplus Peaches any more than of his surplus shorthorns or Berkshire pigs. He is not regarded as a butcher if he does the one; then why should he be called a market gardener if he does the other?" Most certainly a gentleman should not be considered "mean" for selling food produce that would be otherwise wasted. I could tell of a nobleman who sells his surplus fruit and vegetables and devotes the whole of the proceeds to hospitals. It is to the advantage of the community that private garden crops should be sold, because not only is much labour thereby employed in the production, but consumers are better supplied with what they require at the cheapest rate, as the greater the supply the lower the market rates must be. But while I would do the fullest justice to noble sellers, and claim for them the freest action, it is impossible not to distinguish between those who make selling a secondary matter, a prevention of waste, and those who convert their gardens into trade establishments with the object of gain. And even then I would not object if these were placed on an equal rating assessment with cultivators whose livelihood depends on their work; but I cannot recognise the principle of fair trading when one grower for market is rated at from 100 to 200 per cent. higher than another, and I know that industrious men have been crushed out of competition through having to work against gentlemen on unequal terms. I remember "D., *Deal*," once scoring a strong point when he submitted that a grower of florists' flowers was no longer an amateur when he published a catalogue of plants for sale, but must then be regarded as a nurseryman. The proposition was unanswerable. I have before me a trade catalogue, issued from the gardens of a nobleman, from which gardens not only seeds, but all the flowers, fruit, and vegetables that can be raised, are sold. It is a trade establishment or nothing. Why, then, should not its owner be called a seed dealer and market gardener?

IT is well known that ladies of distinction conduct dressmaking and millinery businesses in London, and are not ashamed of their calling. Why should they be? It is at least as honourable as the useless frivolities of life that many engage in as befitting their circumstances; as honourable, too, as it is for their lords to engage in banking, coal dealing, and other trades. No one objects to this, because it is fair trade, and their competitors are not handicapped in towns by accidental conditions.

BUT to go into the country. Is a gentleman who sells farm stock and produce a butcher? He would be if he killed his shorthorns and pigs and cut them up for sale; but if he only rears and grows them, as he has every right to do. I take it he is not a butcher, but a farmer. And many a high bred gentleman does not object to be so called. We read of one of the kings of the realm rejoicing in the appellation of "Farmer George." One of the best farmers I have known and best of men was a country vicar, and he had the word "Farmer" attached to his name on his carts. Once he sent me with a man to drive some cattle a few miles to one of his friends. The man—that is, the drover in chief, for I was a small subordinate, was a thirsty specimen of humanity and did not like returning home without a drink, while he scarcely dared to ask for one. However, he started, but suddenly turned round while within earshot of the master and shouted, "If you please, sir, if the vicar should happen to ask what sort of beer you keep, what am I to say, sir?" What could the master say under the circumstances, but "Come back and try it?" The man's point was thus gained at that end, but there was the other. Fortunately the vicar was in the way on our arriving home, and we were greeted with a hearty "Well, you have got back, and what did Mr. Blank say?" "He asked me what sort of a farmer you was, sir, and I hope I didn't make a mistake, for I told him you had six quarters of Wheat an acre in one close, seven in another, and eight in another." The Vicar paused, then replied, "You told him quite right, go in and have some supper." So, as my chief said, all came right at both ends. I fear some of my friends will think I have had a "queer bringing up;" and it is true I have had varied experiences, with not a bad memory, and I cannot forget this good vicar farmer. He was rich, and farmed with a high motive of showing what could be done by superior culture and the free yet judicious employment of labour. His farm was a model, as clean as a garden, and his exact accounts showed it was profitable. He is long since called away. The parish remains with the same acreage, but not half so many men are employed on the farms, and it is questionable if they yield half the amount of produce they did when the vicar led the way so nobly. He was a devoted parish priest and proud to be a farmer. I have seen a nobleman, too, indicate his calling as a farmer on his farm vehicles. Why, then, should a gentleman who makes all the money he can by the sale of fruit and vegetables object to be called a market gardener? I cannot see that one vocation should be more undignified than the other, and I think whoever is ashamed of either should retire from the business.

BUT I have the suggestion of "meanness" to deal with, and this can best be done by relating an episode from life exactly as it occurred. It shows the difference in "feeling" upwards of forty years ago and now. Then trading by persons of rank was done clandestinely, now it is conducted openly, and few persons will doubt which is the better way. A change was made in the garden of a territorial magnate. All the produce that could be raised and spared was to be sold. A greengrocer was engaged to fetch the "stuff," and none was to be sold to anyone else, but he must not come on the premises till seven o'clock at night, and must be off them by half-past five in the morning in summer; and in winter the time was half an hour before and after working hours. I do not know why the rule was imposed, but I know it was strictly enforced for a few years, then broke down. One Saturday morning the greengrocer took away all he could do with, and at night I was sent to borrow a horse and cart, as our own would not do. Two men and a boy were sent to the market to sell new Potatoes, Strawberries, &c., against the greengrocer, and were instructed to call at the best houses. I was the boy, and got lost in the crowd. It would seem as if pride were ingrained in my constitution; at any rate, I was ashamed of my work, shirked it, and got what was known in those days as a "good jacketing." That was the "meanest" act I have seen in connection with selling produce from a private garden. The author of it was not disclosed. Some thought it was the steward, who was known as a "sharp" sort of person, others the gardener, and others again the men who prevailed on him to let them earn a shilling or two by the huxtering; but no one suspected the owner of the garden of this peculiar method of trading, the worst feature of which was borrowing the cart as a mask for the whole transaction. I remember it well for the reason named—the "jacketing."

MY friends must wait as patiently as they can for references to other subjects they wish me to dwell on, for if I start now there is no telling where I may stop, and it is easy to have too much of a bad thing.—SPECTATOR.

FLORAL DECORATIONS.

THE leading article by "C." on the above subject last week reviews the questions previously discussed in the Journal. Being somewhat of an enthusiast in floral decorations generally, I have been glad to see the matter taken up by the Journal, and also that some of the committees of societies are acting upon the suggestions. I have often wondered there has not been more written about it, as there is a very wide scope in matters of taste, as people seldom agree at once or even after a good deal of discussion as to what is the correct thing. The bouquet mentioned by "C." I should say had been made to order, as I cannot understaud any practical florist committing such an atrocity. The proper place for real Lilac would be in rather medium size sprays round the outside of the bouquet drooping a little over the paper. I have heard of a fashionable lady entering a ballroom with a large bouquet of Richardia spathes, and I told someone of the circumstance, and they exclaimed, "How beautiful!" Not long ago I saw an exhibition bouquet at a local show, by which I mean one not for competition; it was made in a very loose style, not very bad till the centre was reached, then a large Richardia stood about 6 inches clear of the other or surrounding part of the bouquet. It was a bridal bouquet, and I unfortunately made a laughing remark to my neighbour, and was caught in the act by the proprietress, who said, "Do you know that style is to be the taking one of the future?" Then I thought tastes certainly differ. Fancy a Richardia in a bridal bouquet! but I am of the same opinion as "C." that these eccentricities in bouquet making are brought about by the peculiar tastes of different customers. I had on one occasion a special order for a bridal bouquet not less than 2 feet in diameter. I pointed out to the lady the enormous size it would be, but all to no purpose. It was a grand bouquet composed of Eucharis, Gardenias, white Roses, Lily of the Valley, white Azalea, white Cyclamen, white Heath, and studded with single flowers of Cœlogyne cristata, interspersed with the Lily of the Valley, but much too large and weighty for a lady to carry. I could have made as handsome a bouquet with half the flowers, but of course I had to obey orders. I avoid using white Camellias in bouquets as much as possible, as they are injured by the least touch of anything hard. I use them in wreaths, as they look well if put into use at once, which in wreaths or crosses is generally the case. I am also of the same opinion as "C." that Richardias should be used sparingly, say one in the centre of a cross and three at the most in a wreath without special orders to the contrary.

I should like to suggest that if gardeners wish to excel in bouquet making they should not be content with defeating their fellow gardeners, but to try hard to lower the colours of the florists who exhibit in the neighbourhood, and not to mind a first or second failure, but to persevere. Fortune favours the brave, and the fiercer the fight the greater the honour. I should like to ask "C." if he does not agree with me that of late years too much importance has been attached to the first prizes at exhibitions. I do not mean that any exhibitor should not aim higher than second or third, but that when obtaining either of those places he should be encouraged rather more than it has been the custom of late, as often and often there is not much difference, if any, between the first three exhibits. I am not alluding entirely to floral decorations, but other exhibits also. I cannot help thinking if, "Well done; persevere!" was said to the unsuccessful sometimes, it would stimulate him to greater exertion, whereas in the reverse case he would perhaps give up in despair.

I should like to have someone's opinion as to dinner-table decorations. I have watched them year after year for a long time, and have often thought that an improvement could be made. Nothing has been introduced at any time better than the stands that are met with at exhi-

bitions. The single centre tubes, with the three small tubes on triangle wires, if lightly filled with flowers, do not obstruct the view across the table, and afford an interesting feature to the guests. The upper parts of the stands will be attractive also, whereas in the flat stand system there is much less variety. I was once fortunate enough to have a private view of a dinner table laid out for Royal visitors, and thought I was going to learn something, but was rather disappointed to find in the centre of the table an oval dish or bowl all crimson Roses and Maidenhair Fern. The ends were round dishes or bowls filled with all Gloire de Dijon Roses and Maidenhair Fern, and I think the specimen glasses contained red and cream Roses alternately. The whole was taken in at one glance, and again I am bound to say tastes differ.—A. B.



PREPARING AND FORCING MARECHAL NIEL.

Continuing my remarks on this subject from page 63, it may be said that the plants were left outside secured to a wall or fence, from this position being carried to the shed, and the unripe ends of the shoots removed—all the pruning that is needed at that period. Remove the surface of the soil and supply equal proportions of loam and manure. Arrange five stakes round the sides of each pot and train the plant to them, but it will not be necessary to have the stakes more than 18 inches or 2 feet high at the most. They should then be placed in a cool airy structure from which frost only is excluded. While in this position the soil must not become dry, in fact in no stage of growth, or the roots will suffer severely. Even in this position they will quickly display signs of starting. The buds on plants housed about the middle of December have shoots from half an inch to an inch in length, and they have occupied a position in a cool house from which frost has scarcely been excluded.

Perhaps the best of all methods of forcing early is to make up beds of leaves in a house that can be devoted to these plants. If plunged, or even stood on the surface, the gentle heat the leaves afford is ample to start the plants without the aid of heat from the hot-water pipes or even the use of the syringe. The moisture that rises from the leaves is ample for them until the flower buds show. This method allows the plants to be arranged close to the glass, which is a decided advantage in early flowering. Such arrangements are not within the reach of all, and it may be done well by starting them in vineries or Peach houses. Maréchal Niel naturally flowers early under glass, even with cool treatment, and is therefore one of the best Roses that can be grown for the purpose. It produces its flowers from the eyes on both sides of the shoots of the previous season's growth, and therefore has only a few inches of growth to make before the flower buds are visible and commence development. Until they attain this stage the temperature at night must not rise above 50°, when it may be gradually increased to 55°, not exceeding this except on very mild occasions, when it may with safety be allowed to rise 5° higher. If they are forced out in strong heat the flower stems are weak and the flowers small and colourless. Give no ventilation during the early forcing of these plants, in fact not before April—that is, when the plants are growing under warm genial conditions. It is almost impossible to admit air early in the season without cold draughts striking upon the tender foliage of the plants, and therefore subjecting them to an attack of that most dreaded pest, mildew.

When the flower-bud shoots are about 2 inches in length the roots will be active, and tepid water only must be given, and a little artificial manure applied to the surface of the soil two or three times between this stage and the development of the flowers. Plants such as have been described will often produce as many as forty creditable flowers within fourteen months from the time the cuttings are inserted.

Some may think the plants are rendered useless after they have been forced early, but such is not the case if they have been well cared for. Later forced plants, by the time the flowers have expanded, have strong growths springing from below the soil or from the eyes just above it, but this is seldom the case with those that have flowered early in February. If these are kept in the temperature advised for a time after flowering they will not be long before the shoots are visible. Do not cut the plants down directly after flowering, for this proves a severe check to the roots, and the growths made after will rarely attain more than a yard in length. After the shoots from the base are extending freely, say 18 inches in length, the whole of the previous year's wood may be cut away. They will now extend rapidly, and when about 3 feet high they may be placed into pots 2 inches larger. The old roots need not be disturbed farther than the removal of loose surface soil and the drainage from the base. These plants, if encouraged by heat for a time, will make two or three good shoots this season which will be ripened sufficiently soon to flower a month earlier, or by the middle of January. After this season's forcing these plants are thrown out, except one or two perhaps that start away freely a little later in the season, and are retained for a large plant or two. They do not, however, give the same satisfaction as younger plants, unless they are shifted into larger pots, which are too large for moving about conveniently. Lamarque, William Allen Richardson, and the old Gloire de Dijon succeed well grown on this principle. Reine Marie Henriette is beautiful in the bud, but it is too shy to pay for growing early in the year.—N.

A ROSE DAY FOR GARDENERS.

We beg to call attention to our plan of a Rose day for Torquay to raise funds to help in various ways gardeners who may be in distress. The desire is, if funds come in, to assist gardeners whose bad state of health renders a change and rest necessary, in coming down into Devonshire for a few weeks. Dr. Ramsay of Torquay, whose generosity to gardeners is well known, will assist us in getting the use of a sanitorium on special terms, and he would look after the men medically and we secretarially free. It is thought that where the gardener is too poor to pay even the low terms charged for board and lodging and fare down we could, with the assistance of the man's master, pay for this necessary cost, and he would have comfortable rooms for a few weeks, plenty of good food, companions amongst his brother gardeners, and the sea air and breezes of this lovely place. Will you help in this good cause by ventilating the matter in your valuable paper?—Curtis, Sanford & Co.

NEW FRENCH ROSES OF 1887-88.

When I sit down to analyse a list of new French Roses, I can imagine faintly what a gold-digger feels when he sits down before some tons of quartz which he knows must be crushed before he can get the precious metal—he may have a great success, or he may draw a blank; it may be the means of setting him up in the world, or it may end in vanity and vexation of spirit. If he hears that the "claim" has had a good report, that many before him have obtained much from it, he is the more encouraged in his arduous work; but if, on the other hand, he knows that nothing valuable has ever come from it, it is with anything but a light heart that he ventures upon it. And so it is with the Rose lists. The number shows no diminution, the descriptions are as glowing as usual, all the superlatives at the disposal of the writer are as freely used as ever; over and over again are we entranced with the —— description; but then, alas! comes the damping thought—Ah! Mons. A. has said the same thing every year, and yet I have never got much from him worth having. I see here, however, a Rose which comes from what I know to be a good claim, and I may find a nugget in this new one. It is surprising how hopeful rosarians are, and although they have often had to take the bitter pill of disappointment, yet are they prepared for another trial dose. I suppose a man, after having bought a Rose, budded it, and increased his stock, feels a certain sort of tenderness towards it. He first begins to think, Well, it is not quite as good as I thought it was at one time, but I hope it will do. But it gets no better, and finally he is compelled to get rid of it altogether.

Messrs. Ketten, E. Verdier, and others have taken the trouble to get together the lists of new Roses. From it I gather that of the two classes which most interest us, Hybrid Perpetuals and Teas and Noisettes, there are thirty-four of the former and twenty-nine of the latter. Time was when half a dozen Teas was considered a good supply for the fifty or sixty Hybrid Perpetuals. Now we see them approximating one another very closely. It is an instance again of the law of supply and demand. The increased estimation in which the Tea Rose has been held of late years has led raisers to endeavour to add to the beauties we already possess, and although it is very difficult to beat some of those we already have, yet we now and then do get a beauty. Madame de Watteville, Madame Cusin, and Princess of Wales, &c., are proofs of this, although an immense quantity of useless lumber has also been brought forward.

As usual Nabonnand heads the list in Teas and Noisettes, sending out ten of the whole number, while he has also one in the H.P.'s. We are so accustomed to get so much chaff and so little corn from this raiser's productions that we cannot look forward with any great expectation to what he may have for us this season, but here they are:—

NABONNAND.

Agathe Roux.—Globular flowers, delicate rose colour, good form.

Claire Joubert.—Large; orange yellow, not very full; petals large; blooming in clusters.

Edouard Pailleron.—Large petalled Rose; shaded coppery rose, reverse darker.

Jeanne Cuvier.—Flower shaded deep rose.

Miss Lizzie.—Flowers pale yellow, passing to white.

Baronne de Hoffmann, N.—Flowers shaded coppery red, base yellow; a rampant grower.

Comte George de Roquette Buisson, N.—Flowers imbricated; of a bright shaded rose colour.

L'Idéale, N.—Medium size ; yellow and metallic red in colour, with touches of light gold.

Madame Jules Franke, N.—Flowers of pure white changing into yellowish white ; a strong climbing variety.

Triomphe des Noisettes, N.—Colour bright rose ; medium size ; nearly full.

BERNAIX.

Duchesse d'Anerstadt.—Bright golden yellow, deeper at the base ; petals large ; habit climbing.

Souvenir de Madame Métral.—Good form ; flowers light cherry red colour, good shape, brightened with crimson and vermilion ; climbing habit.

Viviand Morel.—Crimson and deep scarlet, brightened with carmine and shaded with rosy yellow. How utterly hopeless it is to imagine what flowers can be really like from such descriptions as these.

PRIES.

Clara Pries.—Creamy white, yellow in the centre. As a seedling from Madame Berard it is evidently one of the Gloire de Dijon race, of which we have had an abundance, but none to excel the parent.

BEAUVILAIN.

Like the preceding, the name of this raiser is new to me, and we have therefore no idea what his Roses are likely to be. Apparently he hails from near Bourdeax, a good locality for seedling Roses.

Lélie Beauvilain.—Flowers imbricated ; white, shaded satiny rose, copper coloured at the base, veined with red ; a climbing Tea.

Gloire de Libourne.—Imbricated flowers of a deep canary colour ; a climbing Tea.

Madelaine Beauvilain.—Flowers imbricated ; clear yellow, base copper coloured, slightly tinted with rose ; a climbing Tea.

These three Roses seem, as far as description goes, to be of the Gloire de Dijon, and I fancy that anyone who grows that Rose largely might readily find blooms to correspond to these descriptions.

SOUPERT ET NOTTING.

Comtesse Anna Thun.—Orange yellow ; flowers cupped.

Madame Max Singer.—Medium size ; clear yellow, shaded with orange ; centre golden yellow.

Thérèse Lambert.—Rose colour, with yellowish red at the base and orange in the centre.

REBOUL

Éliza Reboul.—Flowers moderate, cup-shaped ; outer petals white, centre canary colour ; moderately vigorous ; fatal defect.

Souvenir de Général Charreton.—White, slightly edged with pale rose ; centre rose shaded red, yellow base.

LACHARME.

Henriette de Beauvau.—This Rose will be cherished as the last one sent out by François Lacharme. It is said to be large, globular ; colour clear yellow. I know the old gentleman expressed in strong terms his opinion of this flower, and I hope it may be a credit to his judgment.

GUILLOT, FILS.

Madame Hoste.—Flowers composed of large thick petals ; yellowish white, deep yellow at the base. This sounds well.

COCHET.

Madame Philemon Cochet.—Medium size ; cupped ; rose colour, salmon white at back of petals, slightly suffused with bluish violet.

DUBREUIL.

Princesse de Sagan.—Flowers medium in size ; cupped shape ; velvety crimson, shaded black purple and amaranth.

PERNET, FILS.

Madame Joseph Godier.—China rose, tinted with carmine, shaded with canary red.

PERNET, PERE.

Triomphe des Noisettes.—Nearly full, blooming in clusters ; colour bright rose. Climbing variety.

MOREAU—ROBERT.

L'Abondance.—Medium size ; pure white, slightly rosy on opening ; blooming in clusters from fifty to a hundred. What use this is, except as something in the style of Félicité perpetuelle, I cannot see.

I shall next come to the Hybrid Perpetuals, which are not nearly so numerous this year.—D., *Deal.*

(To be continued.)

ROYAL HORTICULTURAL SOCIETY.

So much advice has been given to the ruling powers of this Society lately that it seems almost superfluous to add anything to what has already appeared ; however, my interest in the Society, and the desire that it shall gain the position it should occupy, are so great that a few words may be admissible. An important step is about to be taken in the election of several new members on the Council, and, like myself, many are awaiting the result with considerable curiosity. If a strong, united, and thoroughly horticultural representative Council be elected a large number of new supporters will be gained, as a reformed policy will no doubt result. I am confident that some of the older and proved friends of the Society could from their long practical experience aid considerably in the reorganisation of the Society, and at the same time perhaps the energy of younger Fellows could be utilised. In any case, if the members elected have not the full confidence of the horticultural world, alterations in arrangements and tempting programmes will have but little effect.

No one who is familiar with amateurs, gardeners, and nurserymen throughout the kingdom can fail to be aware that the interest felt in the Royal Horticultural Society's proceedings and success is much less than it should be, and no one equally familiar with the Society itself can ignore the fact that they have only themselves to thank for this apathy. There is, however, a strong horticultural enthusiasm prevailing throughout the country, and there is no reason whatever why the "Royal" should not attract a much larger number of supporters than it has at present. With a representative Council, a vigorous and generous policy, and lower terms of membership a successful start on a new career might be safely anticipated.

The fair representation of horticulture could be effected in this way. Six of the members should be amateurs, three members of the trade (nurserymen and seedsmen), three gardeners, and three members of the Press (editors or proprietors). Two of the first named and one each of the others should retire annually, but be eligible for re-election. Then as to alteration in the membership, the Fellows' subscription of two guineas could remain unaltered, and for that they should have two transferable tickets ; a membership of one guinea has been proposed and might well be adopted, giving one transferable ticket and voting powers. For gardeners half a guinea is the highest subscription that is likely to give any satisfactory returns, and it would be unnecessary that they should have voting powers, as probably but few would avail themselves of it. But gardeners generally might be given a voice in the management of affairs by permitting all local societies affiliated to the "Royal" to send one delegate each, who, whether members or not, should be entitled to vote on all occasions. The question of electing associates has been raised, but it is a difficult one, though for my own part I think it could be accomplished by allowing gardener members to elect a certain number annually from their own body, such associates to have full voting powers.

The garden at Chiswick could be rendered much more useful with an increased outlay in experiments and testing, but the results must be published promptly to serve their purpose. A monthly record of the Chiswick trials would keep the work of the Society constantly before the public, and be valuable to thousands of persons. The metropolitan meetings must still be followed out, but the shows can be left to other societies at present. Still, the conferences and congresses, which have proved so successful, might be advantageously continued and extended. Some of these suggestions could no doubt be improved, but they are contributed with the earnest wish that whatever course the Society adopts it will be speedily raised from its present depressed state.—An Outsider.

LAPAGERIA ROSEA AT COVENTRY.

The gardens of James Marriott, Esq., are situated in Queen's Road, Coventry, a few minutes' walk from the London and North-Western station, and close to the nursery establishment of Messrs. Perkins and Sons. Plants are well grown in Mr. Marriott's garden, and some of them have appeared formidable rivals in competition with Mr. James Cypher's and other noted exhibitors at the best of the midland summer shows, including Shrewshury, August 17th and 18th last year ; also at Bath Floral Fête, and obtained valuable prizes at the Derbyshire Agricultural and Warwickshire Agricultural Societies. It was at Sandy Show, August 26th, where the splendid specimen Lapageria rosea, fig. 17, was awarded first prize in a collection of ten stove and greenhouse plants. It is grown in a tub, and the measurement is 7 feet 8 inches high and 5 feet through, and at the time bore 300 expanded blooms. A good plant of the white variety bids fair to become as large before long. A Stephanotis growing in a 14-inch pot is about 4 feet high from the rim of the pot and 5 feet 8 inches in diameter, and had on 580 trusses when shown ; this is grown in the intermediate house. Ixora salicifolia, sometimes difficult to manage, is represented by a large and vigorous plant.

Various houses are filled with Ferns and Palms, Eucharis and Pancratiums, Crotons and Dracænas both being well coloured, and other plants all suitable for exhibition and home decoration. Allamanda cathartica is valuable as a winter blooming plant, and Rhododendron

Duchess of Edinburgh is nearly always in bloom. Heaths and other hardwooded plants occupy a house to themselves, a low span-roofed structure about 40 feet long by 12 feet wide. The plants are arranged

well and flower satisfactorily, the useful Oncidium flexuosum is 4 feet through and produces plenty of flowers for cutting. A very dark form of Sobralia macrantha has over 200 growths. Cattleyas and

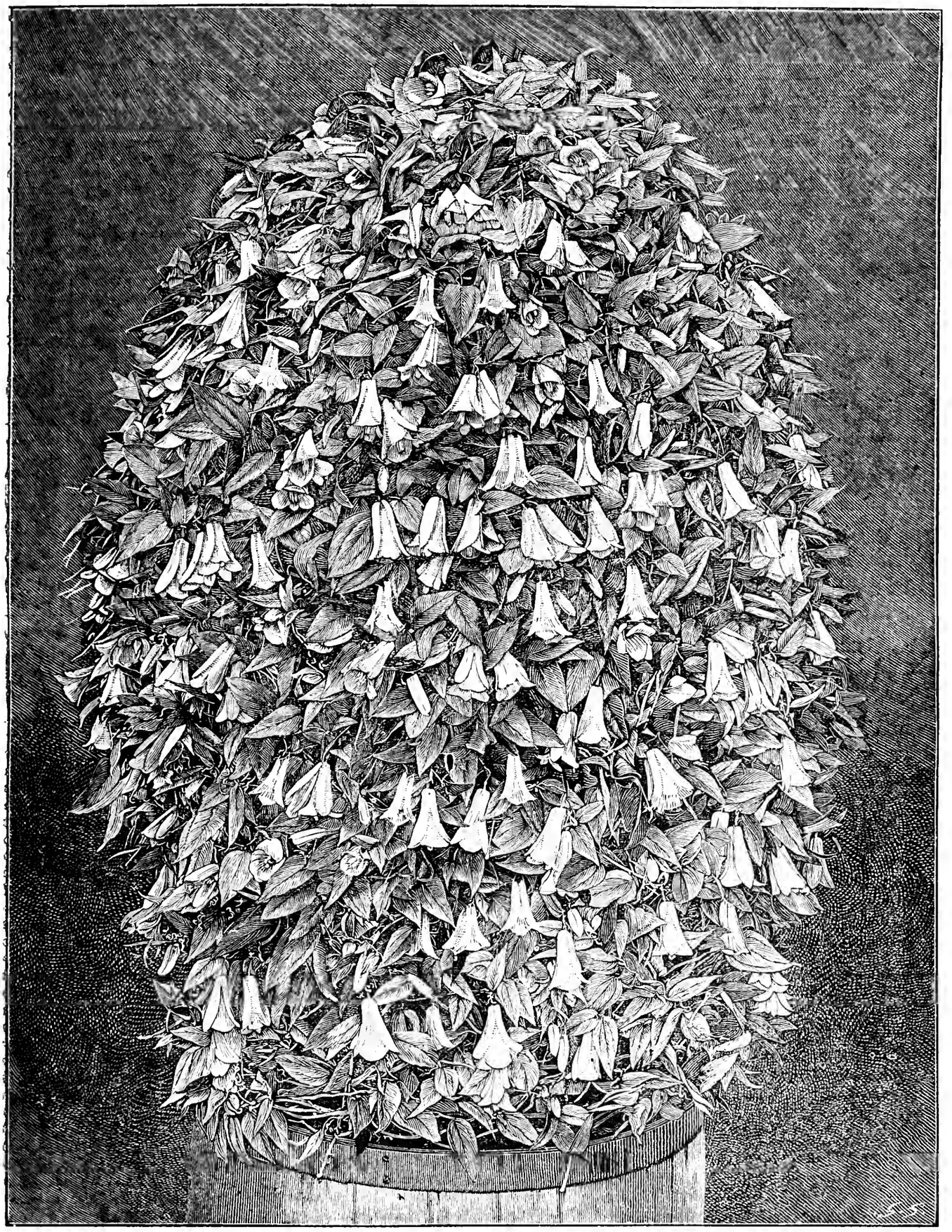


FIG. 17.—A SPECIMEN LAPAGERIA.

on a border of ashes close to the glass, with a free circulation of air among them. All the best varieties are grown.

Orchids receive a good share of attention. The cool house is filled with healthy Odontoglossums and Masdevallias. Phalænopses grow

Lælias look well, C. Dowiana, C. Eldorado, C. Wallisi, C. Sanderiana, C. superba, with C. Mossiæ and C. Trianæ are among the best. Lælia anceps and L. a. morada are flowering well. The collection is rich in Dendrobiums, one plant of D. clavatum has twenty new growths; D.

Dalhousieanum and other tall growing species have done equally as well, and D. japonicum and D. Jamesianum in cooler quarters bear evidence their treatment is understood. There are many other Orchids worthy of notice, and another visit will be paid later on when more are in bloom. Grapes, Peaches, and Pines are rather extensively cultivated, and the management of the place reflects great credit on the painstaking gardener, Mr. W. Finch.—G. W. CUMMINS.

NATIONAL AURICULA, PRIMULA, CARNATION, AND PICOTEE SOCIETIES.

THE following are the annual reports and balance-sheets issued by the above Societies for the past year.

NATIONAL AURICULA AND PRIMULA SOCIETY.

(SOUTHERN SECTION.)

REPORT FOR THE YEAR 1887.—The Committee have much pleasure in reporting to the subscribers of the continued prosperity of the Society.

The Exhibition held on April 26th, under the auspices of the Royal Horticultural Society, was as good as any previously held. The competition was very keen in the principal classes for Show Auriculas; there were in Class A no less than six competitors; in B, seven; and in C, six competitors. The classes for single plants were also well filled with specimens of a high order of merit.

The best thanks of the Committee are due to the Trustees of the "Turner Memorial" fund, who gave £5 in a class for Show Auriculas.

Extra classes were provided for Alpine Auriculas, and it is desirable that a larger competition should be promoted in this section.

Gold-laced and Fancy Polyanthuses, and Primroses were well and numerously shown.

The species of Primulas formed a most interesting feature of the exhibition. Extra prizes had also been provided in this class, and although an excellent display was made, it is desirable that more exhibitors should come forward to claim the prizes.

New exhibitors and new members were added to the list last year, and it is very desirable that a still further increase may be made next year. There is practically no limit to the work yet to be done. The Committee may venture to hope that each member will try to add one more for next year. As conclusive evidence that the work of the Society has been well directed, it is sufficient to state that no less than ten first-class certificates were awarded to Show Auriculas in the various classes last year. This is a sufficient answer to those who believe that the Auricula has been developed to a point beyond which substantial progress cannot be made. The fact ought also to be recorded, that a new member, Mr. White of Killingworth, near Newcastle-on-Tyne, was awarded the premium prize for the best Auricula in the exhibition.

For ten years the exhibitions have been held at South Kensington, in conjunction with the meeting of the Royal Horticultural Society; but it has not yet been decided where to hold the exhibitions for next year.

Owing to this uncertainty, an increase in the funds may be necessary, and the Committee confidently appeal to the subscribers to give the Society their best support as heretofore. Schedules will be prepared and issued as soon as it has been decided where the exhibitions are to be held.

RECEIPTS AND EXPENDITURE FOR THE YEAR 1887.

RECEIPTS.

	£	s.	d.
To balance from last year	24	6	2
Subscriptions and donations as per list ...	90	2	0
Sale of luncheon tickets	1	5	0
	£115	13	2

EXPENDITURE.

	£	s.	d.
By prizes to exhibitors	70	19	0
Luncheons	4	5	0
Printing	4	15	1
Postage	1	15	0
Assistance at show	0	10	0
Balance in hand	33	9	1
	£115	13	2

Examined and found correct,
HARRY J. VEITCH, ROBERT HOGG } Auditors.

NATIONAL CARNATION AND PICOTEE SOCIETY.

(SOUTHERN SECTION.)

REPORT FOR THE YEAR 1887.—The Committee have to report very considerable progress for the past year. New subscribers and exhibitors have come forward, and, as will be seen from the financial statement, there is a considerable balance on the side of the Society. The exhibition was held on July 26th, under the auspices of the Royal Horticultural Society; and although all were agreed that the past season was not altogether favourable to the Carnation and Picotee, there was little falling off in the quality, and none at all in the number of exhibits. The Picotees, flaked and bizarred Carnations, were but little below the high-class quality of the national exhibitions, and a few new ones were exhibited, first-class certificates being awarded. The class for self Carnations and Cloves showed considerable improvement, and the number of exhibitors was larger than usual, no less than twelve exhibitors contesting for one set of prizes. Two first-class certificates were awarded to seedlings in this section.

The yellow-ground Picotees are also in the line of progress, some very notable improvements having been made in this class, to some of which the Society's first-class certificates of merit have been awarded. During the past season some yellow self varieties of a deeper colour than any seen hitherto were exhibited at the Society's exhibition.

The best thanks of the Committee are due to the Trustees of the "Turner Memorial" Fund, who give a series of prizes to the amount of £5.

The Committee are at present unable to state where the exhibition for 1888 will be held; under these conditions increased support from the subscribers may be necessary, and the Committee, as in the case of the Auricula Society, confidently appeal to the subscribers to give the Society their continued support.

Schedules of prizes will be prepared and issued as soon as the necessary arrangements can be made.

RECEIPTS AND EXPENDITURE FOR THE YEAR 1887.

RECEIPTS.

	£	s.	d.
To subscriptions and donations, as per list ...	85	13	6
Sale of luncheon tickets	1	5	0
	£86	18	6

EXPENDITURE.

	£	s.	d.
By prizes to exhibitors	65	2	0
Luncheons	3	0	0
Printing { Ebbs, £3 5s. 6d. / Pollett, £1 9s. 6d. }	4	15	0
Postage, &c. { Douglas, £1 5s. / Hibberd, £1 0s. }	2	5	0
Assistance at Show	0	10	0
Balance in hand	11	6	6
	£86	18	6

Examined and found correct,
HARRY J. VEITCH, ROBERT HOGG } Auditors.

HARDY FRUIT AT CULZEAN CASTLE.

IT is well known to readers of the Journal that Mr. David Murray, head gardener to the Marquis of Ailsa at Culzean Castle, Maybole, Ayrshire, is a good all-round practitioner. His Grapes and other hothouse fruits invariably occupy prominent positions in the prize list at the Edinburgh shows; and although hardy fruits and vegetables have not been often shown both are, nevertheless, cultivated extensively and well in Culzean Gardens. A first-rate Onion raised within the last couple of years is also being sent out this season for, we believe, the first time. The method of procedure followed by Mr. Murray and other good fruit growers is to lift or root-prune a given number of wall and other fruit trees which show signs of exhaustion every autumn until they all have been operated on, and the desired results in way of good crops during ordinarily favourable seasons are thereby secured. A trench about 2 feet wide and 3 feet deep is opened at say 3 feet from the stems of the individual trees, the soil is then, by the assistance of five-pronged steel forks and shovels, carefully worked out from under and about the roots. The latter are shortened a little, removing any damaged or strong roots having a downward course, afterwards, assuming that the drainage is perfect, the soil good, and the roots within the proper distance (5 or 6 inches) of the surface, replacing the soil, working it well among the roots in doing so. But on the other hand, if the cause of unsatisfactory results is traceable to the trees having been planted too deeply on a heavy wet soil they are taken up bodily with care. This done the wet ungenial soil is removed, sufficient drainage being placed at the bottom of each hole to prevent the possibility of the roots of the trees when replanted being at any time submerged. The trees are then transplanted in the best prepared soil at command—a compost consisting of four parts sound loam and one of mortar rubble and wood ashes—spreading the roots over the soil with a slight inclination downwards, and covering them 5 or 6 inches deep with the mixture indicated, following this with a mulching of short dung. The branches of the trees being tacked loosely to the walls until the soil in which they are planted has settled down, an allowance of 3 or 4 inches above the ground line being made for this purpose in planting.

A plan Mr. Murray has adopted for several years is to plant young trees in any open space that can be spared for the purpose, giving them good soil to grow them in for two or three years before transplanting them where they are to remain, making good sized pits and putting about 14 inches thick of road metal in the bottom, making the surface of the metal smooth with lime rubbish before putting therein the necessary complement of soil in which to plant the trees. This, Mr. Murray says, he finds to be much better than flagstones or concrete. Standards, pyramids, and espalier fruit trees are treated in the same manner before they bear well, and as the result of this treatment the fruit is improved in size and quality where there is a very bad cold clay subsoil. The trees, too, are the picture of health during the summer and autumn months, the foliage being quite free from blight, and ripens quite differently from that of trees having their roots down in bad soil. The leaves fall naturally, whereas trees that are in bad condition keep green until they are forced off by the frost, showing that the wood is not ripe and a bad prospect for a crop of fruit the following year.

The subject of root-pruning, lifting, and transplanting fruit trees with a view to promoting fertility, and afterwards maintaining the said trees in a fruitful condition, is not exhausted yet, and its importance in a commercial point of view is sufficient reason for the matter treated of being discussed for the benefit of all fruit growers. In support of this assertion I will quote Mr. Murray's own words, which afford conclusive evidence on this point. He says, "Just take into consideration the great number of fruit trees that is pruned and nailed from year to year that never yield a shillingsworth of fruit in return. This happens more frequently in districts having a bad wet subsoil;" adding, "I know many large gardens in which this state of things is allowed to go on from year to year, expecting a crop of fruit without ever making any effort to get the trees in a bearing state, they very likely being in the same positions in which they were planted as maiden trees." Unfortunately, Mr. Murray's experience in this respect coincides with that of many other gardeners similarly situated.

As soon as the crops have been taken in the autumn is undoubtedly the best time to operate on fruit trees which exhibit signs of exhaustion, or, worse still, have annually failed to yield satisfactory results; nevertheless, we unhesitatingly recommend everyone having trees in the undesirable condition just referred to to set about the work of restoring or promoting fruitfulness in the trees in the manner indicated as soon as possible, so as to get the operation completed before the sap rises. In the case of old stunted trees, root them out and consign them to the fire heap, planting in their stead young healthy trees. Should the prepared soil in which the trees are transplanted be moderately dry, and in the absence of rain at the time the work is being done, give sufficient water to each tree to settle the soil about the roots. Such trees planted as indicated, provided they are afterwards treated with ordinary skill in the way of disbudding, pinching, and training the shoots, giving liberal supplies of water at the roots during a dry summer and keeping the foliage free from the attacks of red spider and aphis, seldom fail to yield good crops of fruit of first-rate quality. Such at any rate is the experience of Mr. David Murray, and no doubt of many other gardeners who have adopted a like method of procedure, including—H. W. Ward.

CULTIVATION OF THE CROTON.

[A paper read by Mr. W. W. Pettigrew before the Young Men's Mutual Improvement Society, Castle Gardens, Cardiff.]

Amongst ornamental fine-foliaged stove plants the Croton stands in the first rank for the rich colour and gracefulness of its leaves. Most varieties differ so much in habit as to make them well adapted to be grown in great numbers together without looking in the least monotonous. Indeed to grow them to anything like perfection they should have a house to themselves. Few plants are more beautiful when well grown than a collection of Crotons when the sun is shining upon them. The large dark-red foliage of Baron James de Rothschild, the rich golden bronze of Queen Victoria, and the large golden-blotched leaves of Morti, blended with the pale yellow and green foliage of variegatus, and the stiffness of these taken off by the graceful drooping foliage of such varieties as interruptus, interruptus aureus, linearis, Weismanni, Cyrus, chelsoni, aureo-punctatus, Princess of Wales, elegantissimus, Warreni, and many others, is a sight to be remembered by all interested in the cultivation of fine-foliaged plants.

The Croton belongs to the natural order of Euphorbiaceæ, and is a native of the East and West Indies, South America, and several other places. It was introduced into Britain during the last century, but since then the varieties—thanks to the energy of hybridisers—have increased to hundreds. The culture of the Croton is comparatively easy, yet it is seldom seen in its best condition. It is now nearly eighteen months since I was entrusted with the management of the Croton house here, and since then I have endeavoured most carefully to carry out the instructions I received, and note the treatment which suited the plants best, and everything I mention in this paper regarding their culture is from my own experience.

To perpetuate a variety of any plant it must be propagated by cuttings, buds, or grafts, as those raised from the seed rarely come true. As a proof of this I may mention that I have at present six seedling Crotons, from 4 to 5 inches high, raised from one of the narrow-leaved varieties, and not one resembles the parent plant, and no two of them are alike. They differ much in the colour and shape of their leaves, and also in the habit of their growth. Some have narrow leaves of different shades of colour, while others have broad green leaves with no signs of variegation whatever.

Crotons can be propagated at almost any season by inserting strong cuttings of half-ripened wood in small pots in a soil or composition made of equal parts of loam, leaf mould, and silver sand, and plunged in a gentle bottom heat until they are rooted. During this stage the cuttings should be dewed over the foliage with a fine-rose watering pot every day to keep the leaves fresh and to prevent red spider attacking them. When the cuttings are sufficiently rooted, which will take from three to six weeks according to the season, they are shifted into pots a size larger, using the following compost—three parts good fibry loam, one of peat, one of leaf mould, a good sprinkling of Thomson's Vine and plant manure, and about a third of the whole of sharp river sand, which will keep the compost fresh and porous. The plants are then placed in the stove close to the glass, where they will receive as much light and sunshine as possible. As the plants increase in size they are shifted into larger pots, always using the same compost as that just mentioned.

Great care must be exercised in watering the plants. The soil should never be allowed to become too dry or too wet and sodden, or the roots will be injured and decay, and the plants will suffer in consequence. The roots of the Croton are soft and spongy, and are therefore liable to damp off if the soil becomes wet and sour on the one hand, or too dry on the other. Great care and attention should therefore be paid to watering at the proper time and in sufficient quantity to keep the plants in a healthy growing state.

It has been truly said that one of the secrets of success in the cultivation of any plant is the frequent and judicious application of manure. This is especially so with regard to the Croton. The great amount of foliage which a large and healthy plant has to nourish soon extracts all fertility from the soil in which it is potted. It is quite different with plants growing in the open air. The soil in which they are growing is always receiving, more or less, natural manures from the rain, for rain and snow never fall to the earth without carrying fertilisers with them. As a matter of course plants grown under glass receive none of these, consequently if they are to be grown successfully manures must be applied artificially, and in greater quantities to large plants that have filled their pots with roots and are growing vigorously, than to those whose growth is at a temporary standstill. The fertilisers applied to the Crotons here are Thomson's Vine and plant manure, liquid cow manure, and soot. The first of these is used as a surface dressing, and the soot and cow manure are mixed together and used when watering.

Crotons are subject to the attacks of several insect pests, but the worst I think is red spider. If once this has possession of any plant its health is ruined in a short time, and the leaves fall off one by one, completely disfiguring it if the spider is not checked at once. The yellow varieties I find are more subject to its attacks than any of the others. The best plan is to give the plants a thorough, and individual, syringing as soon as the pest appears and wash it clean off. But prevention is better than cure, and I think if the syringe was used judiciously every day red spider would be kept under.

Thrips are also great enemies to the Croton; if once they get on a plant the leaves are soon disfigured and ruined, no matter how excellent the treatment may have been. A sharp look out should be kept at all times for this pest, for, unlike red spider, its effects on the plant are not seen all at once, and it is only by close investigation that its presence is discovered in its early stage of development. To get rid of thrips we have two methods—the first is by fumigating the house with tobacco paper, and the other by syringing the plants with a decoction made from tobacco paper mixed in water. The first of these methods is the easiest though the least effective in getting rid of the pest, and the most detrimental to the health of the plants. Many of the thrips fall off the plants and bury themselves in the soil, and remain comparatively uninjured, and by-and-by they ascend the plants again. The smoke is detrimental to the Croton to a certain degree, as I find after the house has been fumigated three times in succession to kill the thrips that many of the leaves fall. Therefore syringing is the most effectual in killing these pests, and it is not in the least injurious to the plants. The only objection to syringing is that it entails a great amount of labour in carrying the plants outside to the open air, and shifting heavy plants loosens the stakes and makes them a little unshapely for the time. Small plants are dipped in the tobacco juice decoction without any trouble.

Scale is another pest which sometimes infests Crotons, but it is easily killed by syringing with a little petroleum mixed in water and kept in perpetual motion while being applied to the plant. Mealy bug can be destroyed in the same way.

I have said nothing in this paper about draining, potting, stopping the shoots to make well-furnished bushy plants, or about heat, moisture, and the ventilation of the house. The pots here are thoroughly cleaned and well drained for all plants that have to be grown for any length of time in them, and in potting the plants are placed a little lower than they were in their previous pots to cover the top of the ball. The soil is pressed firmly down, and when finished sufficient space is left at the top of the pot for watering. The plants are trained with as few stakes

as possible to put them in shape, and the strong shoots stopped shortly before they begin to grow in the spring, to make them branch out and furnish the plant with fine leaves from top to bottom. The temperature of the house is kept at 70°, and it is ventilated when the heat rises above that degree in sunny weather, and it is allowed to rise to 80° or 90° with air in the summer time. When the plants are growing they require abundance of water. They are syringed twice a day, and the bed and path damped frequently during the day.

UNDER GARDENERS AND EXHIBITORS.

CHEER up, under gardeners, don't look so gloomy because you are not complimented by all and sundry regarding the skill you have shown in the cultivation of some special plant, fruit or flower that has been under your own devoted care. Bear in mind that the merits of a good man will not be overlooked, although at the time they may be but little talked of. By the time you want to make a change to better your position, you will, if deserving, receive a certificate from your commander-in-chief, which will stand you in better stead than all the paltry compliments which some of our brethren seem to attach so much importance to. The man who pays attention to his duties and takes a thorough interest in his employment is very seldom overlooked by his superior officers.

Now, do not imagine when I mention taking an interest in the profession that I am an advocate for working extra time systematically without remuneration, but I think there are times when every young gardener who has real interest in his business will not grumble to go out an hour or two in the evenings if he sees that some important work wants doing, whether or not he receive remuneration for his extra services. I know some gardeners who expect their assistants to work overtime every night all the summer without the least encouragement, but rather instead a continual growling. Such men ought not to receive any extra labour from subordinates.

Some of your correspondents try to make out that in the majority of places where exhibiting is carried on under gardeners receive no remuneration to repay extra labour and expenses incurred in taking exhibits to and from the shows. I quite believe there are some such places, but I am confident they are in the minority. Where such a system does exist there is ample room for dissatisfaction on the part of under gardeners; but if under gardeners are to rank for an equal share of praise and prize money in the times of success, and then stand out altogether in the hour of defeat and allow the head gardener to defray all expenses, then the time will come when, instead of our ambition carrying us to a head position, we shall prefer to remain subordinates.

I have been brought in contact with many exhibitors, but there was not one amongst them who did not give his assistants ample remuneration to cover all show expenses. For two years I was under one of the principal exhibitors in the north and was always honourably treated. I did not expect to have an equal share either of money or praise, but was always delighted to think that a little exertion on my part was appreciated by one who did not forget me when he had a chance to further my interests for a higher situation.

Some are also inclined to think that places where exhibiting is carried on are detrimental to all round practical knowledge. With those I again disagree. Are we to ignore the hundreds of establishments which have proved to the horticultural world their superiority in the culture of all round garden produce? I say, No, but ought rather to be looked at as models in the gardening world.—J. E. M.

Mr. GOSCHEN'S advice to the Aberdeen students may be equally acceptable to many of our own fraternity, and his remarks apply with equal force to those whose complaints have been published in this Journal the last few weeks under the guise of "Under Gardener's." When he says, If a man is anxious to succeed he must study for the love of learning, and not for the sake of gain, and to put their whole energy in their work, for unless they do this they are doomed to disappointment, and are found the most discontented with their lot. Surely these remarks strike hard those who seem to begrudge any little extra exertions their employer may require of them, fearing it might benefit the employer more than themselves. The reason for this is difficult to imagine, for are not their interests identical? for I doubt if the one could make much progress without the aid of the other. How easy it is to apply every exertion to any little pet hobby of our own, how assiduously we work until our end is accomplished. Now where is the difficulty to apply a little of the same energy for the supposed benefit of others, which in the case of gardeners are one and the same? I think the difficulty will be found in the disposition.

Mr. Goschen alludes to the high class education in the commercial schools of Germany, and regrets the same schemes are not practised in this country, but I question if the benefits would be as great as expected, for cultivation seems to injure our disposition for work.—J. H. GOODACRE.

DAFFODILS IN POTS.

HAVING grown these for early work in great numbers I am well able to endorse the opening statement of Mr. Calthorpe, at page 82, where he says, "these are not grown nearly as much as they deserve to be." Your correspondent appears to have experience of Daffodils going blind, at the same time attributes the fact to a rather strange cause. During the planting season—*i.e.*, from September to November, we frequently turn out a few "rogues," which at that busy time are thrown into the "mixed boxes" to await attention. If taken from a quarter where the best are planted they are in time replanted, but if not they are thrown away. I have experiences of the latter which include many varieties, lying in a heap the whole of the winter exposed to all weather, and having several inches of new roots upon them when upturned, still making efforts to grow, and curiosity has led me to try what they are capable of enduring; the results I will in due time record. Some Tenby Daffodils, however, which had escaped notice when they were picked up, and which were discovered in December last when planting other things, I have put in boxes and pots, and these have since flowered well, notwithstanding that they were on the surface for nearly five months fully exposed, and from the manner the majority perfected their flowers one would imagine that their culture had been the best throughout. Certainly the flowers had been previously formed in the bulb, and all that remained was to bring them out. This could hardly follow if, as your correspondent imagines, exposure to light should cause them to go blind. I do not see how the light would affect them, especially when they were only left under the ashes till "well rooted," which they would be in four or five weeks after potting, and the growth still under the surface. Had Mr. Calthorpe allowed them to remain till now covered with 3 inches of ashes, I do not think he would find them above it. I am of opinion that we must seek in another direction for the cause of blindness, and would suggest that the pots used by your correspondent are much too small. Imagine three fair-sized flowering bulbs of double Daffodils in a 4-inch pot. Such a statement makes one inquire—first, where are the bulbs? secondly, where are the roots these would form? and thirdly, where is there sufficient soil in so small a compass for their sustenance and development?

Two other causes of Daffodils going blind are subjecting them to the hottest sun after being lifted, and packing them too closely together before being fairly dried, which causes sweating. Either of these as well as giving them too much heat very early in their season will cause the flower buds to go blind in the bulb. All the Daffodils after the opening of February will endure a much stronger temperature than that given by Mr. Calthorpe with impunity, at least so far as flowering them is concerned, but before that time they should be kept as cool as possible, for although they are to be had in flower much earlier than the present time, it is only done at great risk and frequent heavy losses. Apart from this fact I hardly see the need of them while Chrysanthemums can be had in quantity, and also any colour, though perhaps the tone of colour which we find in these Daffodils is not easily matched and is eagerly sought for.—J. H. E.

I QUITE agree with your correspondent, Mr. J. A. Calthorpe, page 82, that these are not grown nearly so much as they deserve, and as there are many varieties greatly admired when seen flowering in the outdoor borders, it does seem a mistake not to prolong their season of enjoyment. It is easy enough to have them in flower early in January, and we find it possible even some days earlier still. We quite agree that too great heat is not so well for them, but the well-known Tenby variety, provided the pots are well filled with roots to begin with, will stand very well in 55° to 65° of heat without drawing, provided it is kept near the glass up to the point of one or two blooms just opening, then moved into a cooler place for a few days before being taken in for house decoration. We are always glad of this variety as soon as we can possibly have it in flower. We place seven bulbs in a 32-inch pot, and the wonder is that gardeners do not grow this variety a great deal more than they do. We like to have a few pots also in our plant house arranged among Hyacinths and other things. Then, too, how seldom we meet with that pretty little variety, minor or nanus, which can be had in flower soon after Christmas, and when frequently called upon to furnish a quantity of cut flowers for small glasses on the dinner table this variety is most useful.

In regard to covering bulbs with coal ashes after being potted, there seems to us to be only one advantage as against fresh fallen sweet leaves—namely, that you can leave the bulbs longer under them than under leaves, the ashes not crippling the growth like leaves; but as this can easily be avoided, we much prefer leaves, and to get a good pressure we lay heavy boards over the leaves, otherwise a quantity of leaves would be wanted to get the weight required to prevent the bulbs rising out of the soil while making their roots.—T. S.

THE LIVERPOOL HORTICULTURAL ASSOCIATION.

THE short report of the annual meeting which appeared in your last issue commenced and finished with the close of the proceedings, and must convey the impression of a conflict of opinion between two of its members rather than a summary of the general proceedings. At the previous annual meeting, held on January 21st, 1887, the Treasurer's financial statement showed a balance to the good of the Society of £549 16s. 4d.; the statement of accounts for the past year, however, are far less satisfactory, the balance being £340 18s. 6d., or a loss on the year's working of £208 17s. 10d. The Spring Show was fairly satisfactory, proving a gain of £17 8s. 9d. on the corresponding Show of 1886. The Summer Show was very unsatisfactory, the loss being £147 1s. 11d. as compared with that of 1885. The Autumn Exhibition was equally disappointing, and proved a loss of £72 4s. 10d. compared with the Show of 1886. The amount collected in subscriptions is £564 18s. 6d., or £26 5s. less than in 1886.

After the adoption of the report and balance-sheet, and a vote of thanks to retiring officials, the election of officers for the present year took place, which resulted in the re-election of Fletcher Rogers, Esq., as Hon. Treasurer; Mr. G. Blackmore, Sub-Treasurer; Mr. E. Bridge, Secretary; Mr. J. Kelly and Mr. J. Peers, Auditors; while Messrs. White, Bennett, Jellicoe, Rimmer, Turner, Wilson, and Cox were re-elected members of the Committee; two new members being added in Mr. D. Lindsay and Mr. Bryan.

Mr. R. W. Ker then proposed that the sums of £3 and £2 be granted as donations to the funds of the Gardeners' Royal Benevolent Institution and the Gardeners' Orphan Fund respectively; this being carried unanimously.

Mr. Bardney, in order to reduce the expenses of the Society, next proposed that the amount offered in prizes for the three Shows of 1888 be reduced to the extent of £157—viz., £17 Spring, £105 Summer, and £35 Autumn Exhibitions respectively. To this Mr. Cox moved an amendment that the subject be left in the hands of the Committee, which was carried by a majority of two to one. A cordial vote of thanks to Mr. White for presiding brought the meeting to a close.

The Committee have already arranged for three shows as usual, the amount offered in prizes being about the same as last year. The Spring Show, as already advertised, will be held on March 21st.—A COMMITTEEMAN.

[Other Horticultural Societies with a favourable balance in hand may imitate the excellent example of the Liverpool Association in contributing to the funds of the Institutions mentioned.]



DATES OF CHRYSANTHEMUM SHOWS.

A CORRESPONDENT suggests the desirability of our publishing dates of fixtures of shows where such have been decided, as he thinks this might guide other Societies in their fixtures, and to some extent avoid "clashing," though that is difficult with so many exhibitions occurring within a month. If secretaries of shows will favour us with a postcard of their dates for the present year, whether they have been previously intimated or not, we will insert them as suggested.

CHRYSANTHEMUM GROUPS.

NOTHING adds more to the attractions of a Chrysanthemum Show than groups of Chrysanthemums interspersed with foliage plants, and yet I am surprised to find that out of about forty societies whose schedules for last year I have been looking through, only seven societies allow foliage plants to be used in arranging groups.

The Chrysanthemum plant alone is not well adapted for the formation of artistic groups, although for staging as cut blooms it is unsurpassed. But what can be more beautiful than groups of Chrysanthemums relieved with handsome foliage plants and surrounded with a bordering of Ferns and other dwarf plants? Such plants show none of the stiffness and want of grace of Chrysanthemum groups alone. Their unsightly sticks and stems are effectually hidden, and their formation, whether the shape be circular, square, or semi-circular, provide great scope for the display of taste and judgment. In order to maintain the distinctive character of the Chrysanthemum show all other flowers, also berries, should be rigidly excluded. As societies will soon be arranging their schedules I offer this suggestion as a means of increasing the attractiveness of their exhibitions.—EDW. HARLAND.

SHOWING—OWNERS' CLAIMS.

I HOPE the letter of "Phantom" will not cause "Wraith" to omit the letter *i* in his *nom de plume*, but it certainly does seem to me to be inconsequent and illogical, and during the reading of it I found myself once or twice repeating one of the sentences—"Surely there is a mistake somewhere."

I did not gather from "Wraith's" letter that he objected in any way to the prefix of "Mr." to the gardener's name. I understood him merely to be contrasting the old form of exhibition card with the modern one, and agree in almost every respect with the subject of his letter. No employer worthy of an honest man would object to the titles of common courtesy being applied to his gardener however humble his position might be, but it is apparently this supposed objection which has raised the ire of "Phantom" in all the first part of his letter. If not, what has the truth that some gardeners are men of refinement and education to do with the fact that the flowers they exhibit belong to their employers? "Phantom" says later, ... "we return to the gardeners. In the future their names must not appear. Reports of shows will then stand thus," &c., which he has no doubt made very amusing. But if it be asked, Who has suggested that gardeners' names must not appear? it must be answered, Nobody but "Phantom" himself in the words quoted. He has himself raised a phantom for the purpose of demolishing it, not a difficult task.

"Wraith" wrote to complain of employers' names being omitted, and a very just complaint in my opinion, and "Phantom" writes to show how unjust it would be to omit gardeners' names, which no one but himself had suggested.—W. R. RAILLEM.

I DO not exhibit very much, but when I do I certainly like to have my master's name on the cards, and always send his name with the entries. In 1887 I exhibited at three shows in the north, and in no one instance was his name on the cards. In the papers reporting the shows his name, of course, never appeared, and I must say that if we were in changed positions I should not like to go round an exhibition and see my own produce shown without the slightest notice being taken of my right in it. It so happens that poultry, horses, cattle, &c., are shown from the same estate, and the owners' name is the only one mentioned in these cases. I do think this is a matter requiring to be remedied.—B.

RALPH BROCKLEBANK.

I HAVE (Feb. 3rd) sent herewith two Chrysanthemum flowers—one of Meg Merrilies and the other the golden sport from it, Mr. R. Brocklebank—to show the adaptability of these varieties for late work. They are, as you will, see terminal flowers from disbudded plants.—T. WINKWORTH, *Childwall, Liverpool.*

[The flowers were very fresh and good for the time of year, Ralph Brocklebank especially so.]

CHRYSANTHEMUM PROPAGATION.

I HAVE several hundreds of Chrysanthemums inserted in cold frames exactly like Calceolarias, Violas, and other hardy plants of that type. These are, of course, cuttings which were taken early. Those who do not require to grow exhibition blooms may use a considerable freedom in the methods of propagation. We have repeatedly struck stock in a hot propagating house, and never saw any bad effects follow. Last season I was obliged to strike between two and three hundred in this way, and some of them turned out as well as those that were struck earlier and cooler. I allow myself considerable latitude throughout with regard to these most useful flowers, and find one method of treating them just as good as another.

I have not seen gloriosum set down as worth growing for its scent. Here it is decidedly honey-scented. It is also one of the very best for decorative purposes in a cut state, though it must be grown on the single stem principle in order to have fine blooms.—B.

JAPANESE CHRYSANTHEMUMS FOR EXHIBITION.

FOR the information of "An Anxious Inquirer" I give the names of varieties which in my opinion are the best nine varieties of large Japanese for exhibition, adding also their colours. Madame C. Audiguier, deep mauve; Belle Paule, white edged with rosy purple; Boule d'Or, yellow and bronze; Jeanne Délaux, dark velvety brown; Edwin Molyneux, purple, crimson, and gold; Mr. H. Cannell, soft yellow; Mrs. H. Cannell, snowy white; Fair Maid of Guernsey, white; Triomphe de la Rue des Châlets, salmon red. If nine varieties are required for exhibition it would not be wise to depend upon that number only for supplying the necessary blooms, as all varieties do not succeed in the same season; therefore it is better to allow a margin by growing more than are really required. At the least three or four varieties should be added to the number already given. Criterion, amber; Mdlle. Lacroix, white; Ralph Brocklebank, primrose yellow; Mrs. J. Wright, white. Avalanche is a very fine white variety, but as it is so scarce at present it is perhaps not wise to give it a foremost position in a list of varieties for fear of disappointment to those wishful to cultivate this sort.—E. MOLYNEUX.

MR. H. LOWMAN also gives the following names of nine good Japanese varieties worth growing:—H. Cannell, Avalanche, W. G. Drover, E. Molyneux, Carew Underwood, Ralph Brocklebank, Mrs. H. Cannell, Maggie Mitchell, and Boule d'Or.

CHRYSANTHEMUM PROPAGATION.

I WAS pleased to read the note under the above heading by Mr. A. R. Cox on page 91. As a well-known successful cultivator and exhibitor, the opinions of Mr. Cox will carry much weight with many readers, and justly so. Nevertheless, as he surmises, I do not believe the mode he advocates and practises to be the best possible. The mode I have found most simple and successful for the last four or five years is to place four or five cuttings in each pot, and to place the pots inside small single-light frames, which are quite cool, excepting that they are placed inside a freely ventilated Peach house, from which, as in the case of Mr. Cox's house, frost is excluded by hot-water pipes. The frame lights are slightly tilted almost from the first, and the condensed moisture is wiped off them each day. Under this treatment the cuttings never flag, are about one month in forming roots, and there are scarcely any losses. I do not think I have this season lost more than 5 per cent. of all the cuttings inserted. I certainly cannot suppose flagging can be beneficial, and it must cause the cuttings to be a longer time in producing roots than when such is prevented.—W. K. W.

CHRYSANTHEMUM ROSEUM SUPERBUM.

PERMIT me to write a word in praise of this excellent Chrysanthemum. We have had it in flower here since the second or third week of November. For cutting it is invaluable, and is much appreciated arranged with Maidenhair Fern. We cut the last of it on the 4th inst.

for the dining-room table. It is rather a tall-growing variety, but if grown on the cut-back system it can be had dwarfer.—G. HILTON.

EXHIBITION CHRYSANTHEMUMS.

I SEND the results (tabulated) of the Chrysanthemum competitions of the past season. It is compiled on the same lines as the one you published last year, and commences with the Southampton Show, November 2nd. Even a cursory glance will demonstrate what considerable changes in the relative positions of the various kinds have taken place during 1887.

Among the incurved Empress of India still leads, but only in conjunction with Lord Alcester, which occupied seventh place last year; having ousted Golden Empress, this latter variety retiring to fourth place, where it now ties with Queen of England, which has advanced one place. Lord Wolesley's record is disappointing, but Alfred Salter jumps from the sixteenth up to the seventh place. Hero of Stoke Newington rises ten places, while Empress Eugenie wins more than double the number of prizes in 1887 than it did in 1886! Nil Desperandum, on the other hand, experiences "a heavy fall," securing only six prizes against twenty-seven in 1886. I will not go further through the list; your readers can make their own observations and draw their own deductions, which will doubtless vary greatly. I may, however, point to the rapid rise to fame of Bronze Queen and Mrs. N. Davis, neither being prizewinners in 1886. Last year, however, they took eleven and five prizes respectively, being the only new incurved varieties which have come to the front at all.

Position in 1887.	Position in 1886.	INCURVED. First Fifty Prize-winning Varieties.	Number of Prizes.	Position in 1887.	Position in 1886.	JAPANESE. First Fifty Prize-winning Varieties.	Number of Prizes.
1	1	Empress of India	46	1	2	Madame C. Audiguier	42
2	7	Lord Alcester	46	2	14	Belle Paule	37
3	5	Jeanne d'Arc	36	3	1	Jeanne Délaux	37
4	2	Golden Empress	35	4	10	Meg Merrilies	36
5	6	Queen of England	35	5	11	{Triomphe de la Brue des Châlets}	33
6	3	Lord Wolseley	30				
7	16	Alfred Salter	25	6	3	Mdlle. La Croix	31
8	9	John Salter	24	7	8	Val d'Andorre	31
9	19	Hero of S. Newington	21	8	7	Boule d'Or	28
10	8	Prince Alfred	21	9	5	Fair Maid of Guernsey	28
11	4	Princess of Wales	21	10	9	Thunberg	28
12	10	Jardin des Plantes	19	11	13	Criterion	27
13	18	Barbara	17	12	18	Baronne de Prailly	21
14	15	Lady Hardinge	16	13	4	Comte de Germiny	18
15	13	{Emily Dale (9) Golden Queen (6)}	15	14	35	Madame John Laing	18
				15	—	Ralph Brocklebank	17
16	21	Mr. Bunn	15	16	15	Soleil Levant	17
17	36	Empress Eugénie	14	17	16	Elaine	15
18	17	Mrs. Heale	14	18	25	L'Adorable	15
19	12	Princess of Teck	14	19	6	Japonaise	13
20	14	Cherub	13	20	22	Yellow Dragon	13
21	25	Refulgence	13	21	17	Marguerite Marrouch	13
22	20	Mrs. H. Shipman	12	22	27	Maiden's Blush	12
23	—	Bronze Queen	11	23	12	M. Astorg	11
24	28	Princess Beatrice	10	24	24	Duchess of Albany	10
25	29	Novelty	9	25	26	M. John Laing	10
26	37	Eve	6	26	29	Fernand Feral	9
27	39	Mabel Ward	6	27	21	Grandiflorum	9
28	11	Nil Desperandum	6	28	28	Bertie Rendatler	8
29	41	Sir Stafford Carey	6	29	19	M. Brunet	8
30	27	Mrs. Dixon	5	30	32	Album Plenum	7
31	—	Mrs. N. Davis	5	31	20	{Comtesse de Beaujregard}	7
32	22	Prince of Wales	5				
33	40	Beauty	4	32	41	Gloriosum	7
34	46	Golden Eagle	4	33	38	M. Ardene	7
35	35	Mr. Brunlees	4	34	31	M. Tarin	7
36	48	Mr. Howe	4	35	33	Hiver Fleuri	6
37	34	Beverley	3	36	—	Madame B. Pigny	6
38	30	Mr. George Glenny	3	37	—	Martha Harding	6
39	31	Mrs. G. Rundle	3	38	—	Carew Underwood	5
40	23	White Venus	3	39	43	La Triomphante	5
41	24	Baron Beust	2	40	34	Madame de Sevin	5
42	44	{Beethoven (1) St. Patrick (1)}	2	41	44	M. Freeman	5
				42	23	Peter the Great	5
43	45	Bronze Jardin	2	43	30	Bouquet Fait	4
44	38	Guernsey Nugget	2	44	—	Edwin Molyneux	4
45	46	Isabella Bott	2	45	50	Flamme de Punch	4
46	42	White Beverley	2	46	—	Moonlight	4
47	43	Angelina	1	47	—	Avalanche	3
48	51	Blush Queen	1	48	—	Dormillion	3
49	—	Inner Temple	1	49	—	Le Sceptre Toulousain	3
50	—	Mr. Corbay	1	50	48	Mdlle. Moulise	3

Among Japanese the most remarkable change of fortune is to be found in the case of Belle Paule, which stood fourteenth on the list in 1886, but in 1887 yielded only to that grand old favourite Madame C. Audiguier. Jeanne Délaux, however, ties with Belle Paule, while Meg Merrilies runs it very close. Mdlle. Lacroix, Comte de Germiny and Peter the Great recede considerably, though the greatest "backwardation" is to be found in Japonaise, with only thirteen prizes last season against thirty-four in 1886. I may just mention here that during the southern shows Val d'Andorre seemed likely to secure premier honours, but as the season advanced this fine variety ceased to advance in favour.

Perhaps the most astonishing fact to notice in connection with the past season has been the rise of Ralph Brocklebank from 0 in 1886 to fifteenth place in the 1887 list, while Edwin Molyneux, a still newer variety, has already won four prizes. Madame B. Pigny, Martha Harding, and Carew Underwood also stand well. But with these few exceptions that vast crowd of new varieties brought out with such a flourish of trumpets in 1886 have failed as prizewinners, and have probably ere this been consigned to their proper place, the rubbish heap! Duchess of Albany and Bertie Rendatler, you will notice occupy exactly the same places as last year, a coincidence which also occurs amongst the incurved in the case of Mr. Brunlees.—B. D. K.

SIZE VERSUS QUALITY.

I AM very much obliged to Mr. Goodacre for so strikingly corroborating the observations made by me on this subject, and if he will read again he will find I did not, as a rule, condemn the growth of fine sorts to their full dimensions. When I said "Muscats and others of that type," the reference is wide enough to include Canon Hall, and also the Duke of Buccleuch. As I said, where there are exceptions they only prove the rule. Surely Mr. Goodacre would never suppose that I could class the grand old Royal George Peach among the large and coarse varieties, such as Lord Palmerston and Barrington. I must say that I do not admire the taste that would prefer a pumpkin-looking Melon, 20 lbs. weight, in the dessert in preference to a moderate sized fruit. If Mr. Goodacre's twenty pounder be as fine in flavour as, say, Imperial Green Flesh or Golden Perfection Melons it is such an exception as I have never met with, and even if it be, would not five 4 lb. fruits be more desirable for family use? Many families would not allow a Melon of such size on the table. I am afraid it would be stale by the time it was all eaten.—D. THOMSON.



KITCHEN GARDEN.

THE WEATHER AND THE CROPS.—The weather has been seasonable, with frost and snow, and although these are not favourable to the advancement of kitchen garden crops or work, all vegetable gardens will be benefited by them. The soil works beautifully in March after a February frost, and where all empty quarters have been dug roughly over the surface will now be receiving as much benefit as if it was dressed with some artificial fertiliser. The application of manure should be pushed forward, all trash and refuse burned, and the ashes placed on the soil. Vacant quarters undug may be turned deeply in open weather, as in all probability they may still be favoured with sharp frost.

FORCING.—As a rule a great effort is made to have a quantity of forced produce in at Christmas, but after that the supply is apt to lessen, and in many cases this will not give satisfaction. Choice vegetables in the dead of winter are always acceptable, and so they are in the spring months, as February and March are periods when the supply of open air vegetables are often more scarce than in December and January. We would therefore urge cultivators to force all they can at this time. Do not rob the Asparagus beds by lifting more roots for forcing than can be spared, but do not fail to force all surplus ones. Every root of Seakale may be forced that is large enough to bear this operation, as it can always be planted afterwards to grow and become useful again. Rhubarb may also be forced in quantity. Do not lift the roots now, but cover them with pots, boxes, or casks, and fermenting material. Keep up a supply of Mustard and Cress, and fill all available spaces with Kidney Beans.

TOMATOES.—The open air culture of Tomatoes is becoming more common every year. Those who try them find they succeed better than they expected, and their culture is so easy in the open and the crop so heavy that they soon insure for themselves extended favour. It is essential that the plants be raised early and have them well advanced in size for planting out in May. We have known good plants turned out then produce ripe fruit by the end of June, and continue bearing heavily until cut off by frost in early winter. We therefore recommend seed to produce plants for the open to be sown at once. If a pinch is sown in a 6-inch pot many plants will be produced that will soon gain size when repotted singly or put into boxes a few inches apart. These plants should not be hurried; they are much better when kept in a temperate place and grown sturdily, as then they do not receive any check in being transferred to the open. Spindly plants are never satisfactory. We have raised some capital plants for the open air by taking cuttings from the early fruiting plants, and if these are rooted in March they will be found to do well.

POTATOES IN FRAMES.—No matter what the weather may be, we never think of planting Potatoes in the open until March. Good weather might tempt some to put them on in February under the protection of a wall, but the growth is seldom rapid or satisfactory, and we always have more from a March planting than a February one, but early Potatoes may always be had in quantity from frames, and all structures of this sort may be filled with them. As a rule they are grown on hotbeds, and many are of opinion that early Potatoes can only be had by the aid of such; indeed, they never think of planting unless they can put them on a hotbed, but their culture might be greatly extended in frames without hot manure. A hotbed always causes Potatoes to make much top growth; in fact, this is so luxuriant in some cases that it almost prevents the tubers gaining any size, but if the Potatoes are planted in the frames without manure this will not happen, as they are not forced

into unnatural growth. If some good rich soil is put into the frames to about the depth of 1 foot, and the sets planted 15 inches apart and 6 inches deep, they will produce a fine crop and be ready for use some weeks before any planted in the open. In dealing with first crop Potatoes none but the earliest should be planted, and these are all of the Ashleaf type. At present we are filling twelve lights with them.

VEGETABLES FOR FIRST CROPS.—We can see it is not likely to be a very grand spring for raising young Cauliflowers and Brussels Sprouts in the open for the first crops, and an early supply of all sorts should be raised under glass. It is astonishing what can be done with frames in this way, or indeed a few boards and glass lights. If a slight hotbed is formed, a rough frame put on the top of it, and a layer of good soil put inside, a capital place for raising early vegetables is at once formed. We have just sown two lights of Cauliflower, one light of Brussels Sprouts, one light of Lettuces, one light of Celery, two lights of Radishes, and one light of early Cabbages in this way. The young plants will soon appear, and by carefully ventilating them on fine days and covering them in frosty nights they will grow so hardy and sturdy that many of the largest will be transferred direct from the frame to their bearing quarters early in April. Where frames are not available, a pinch of seed may be sown in a box of the vegetables named except the Radishes, and an attempt should be made to have some in as soon as possible, as plants raised under protection are always in advance of those in the open air.

FRUIT FORCING.

VINES.—*New Borders.*—The soil for new borders should now be prepared, and the best for the purpose is the top 3 or 4 inches of a rich pasture of a friable nature, neither very light nor very heavy. As that is not always obtainable light loam may have an addition of clay marl, and heavy loam an addition of old mortar rubbish, about a sixth in each case. To good friable loam add a tenth of old mortar rubbish broken small, removing every particle of wood, as laths, &c. To all add a twentieth part of the bulk of charcoal, and a fortieth part each of crushed bones and calcined oyster shells. Chalk is also a good application to light soil. If the soil be poor a fifth part of short fresh stable manure or horse droppings may be added, otherwise manure or vegetable refuse should not be added, manure in most cases being best applied as a mulch. In preparing the border, which may be proceeded with as the weather permits, bear in mind that no fruit tree requires more copious supplies of water when in growth than the Vine, and at the same time is more impatient of stagnant water; hence drainage should receive first attention, and instead of excavating, concreting, and cementing, keep the border well elevated as far as circumstances admit. Employ 3-inch drains, with proper fall and outlet. Provide a foot of drainage, the roughest at the bottom and the smallest at the top, which last preferably may be old mortar rubbish. If the border is intended for early or late Vines allow a sharp slope to the south for the purpose of throwing off the wet by shutters or other means. The best time for planting Vines is from April to June inclusive, and those intended to be planted at that season should now be cut back to the length required and be placed in a cool Peach house or pit to start into growth, and the new shoots are 2 or 3 inches long shake out the plants and plant them in the permanent borders. A 6 feet width of border will be sufficient in the first instance. Where the Vine roots are to have the run of both inside and outside borders they should be confined inside, not making the outside border until the Vines are thoroughly established.

Early Forced House.—The Vines in flower must have a temperature of 60° to 65° at night and 70° to 75° by day artificially. Keep the atmosphere somewhat drier by free ventilation, leaving a little air on at night, yet keeping the floors sprinkled three times a day during bright weather. Any shy-setting Grapes may have the pollen distributed by brushing them with a camel's-hair brush. Stop the laterals at the first leaf, and keep those stopped to one joint throughout the season, but those beyond the bunch may be allowed to make two or more joints before stopping them, provided there is space for the full exposure of the foliage to light and air. Avoid overcrowding the foliage; it is better to reduce the laterals than do that.

Houses Started at the New Year.—The Vines are in leaf and showing fruit. Disbud when it is seen which shoots are likely to afford the best bunches. One bunch on a spur is as much as is likely to finish satisfactorily, but if there be space, the spurs being widely distant along the rod, two shoots may be left, it being clearly understood that only one is to be allowed to carry fruit, the duplicate only remaining until choice can be made of the best, and in case of two shoots being left one ought to be near the main rod, so as to keep the spur as short as possible. Weakly Vines, however, may be given more latitude, so as to secure stouter wood, larger and plumper eyes, and better bunches in future. See that outside borders are sufficiently protected to prevent chill by heavy rain or snow.

Houses to Afford Grapes in July and August.—The Vines must now be started. Damp the roots three times a day and every available surface. A temperature of 50° at night, 55° by day, and 65° from sun heat is suitable until the buds begin to move. Bring the inside border into a thoroughly moist state by repeated supplies of tepid water or liquid manure. Afford outside borders sufficient protective material to prevent chill.

Ripe Grapes.—Avoid fire heat as much as possible in the Grape-room, admitting air to prevent an accumulation of moisture, replenishing the latter with clear soft water as required. An equable temperature of 45° is most suitable.

CHERRY HOUSES.—These are not nearly so common as they deserve to be, indeed there is no fruit so esteemed at dessert as this most agreeable fruit. A lean-to house erected against a wall with a south aspect is suitable for Cherries, and it need not be more than 6 feet in width. The back wall can be covered with trees, and the front to a height of about 6 feet with trees on the Mahaleb stock. Provide ventilation at the bottom and top of the house, and the front roof lights be moveable. The border should be inside, though the roots may have access to an outside one, thoroughly drained to carry off superfluous water. Good loam rather strong is most suitable, adding about a sixth of old mortar rubbish and a fifth of road scrapings, increasing the grit if the soil be too aluminous. Trees from the open wall between four and six years trained, if carefully removed to the house come into bearing at once. Water them well to settle the soil about the roots, and ventilate freely, syringing in the morning and again early in the afternoon, employing fire heat only to exclude frost; but when the trees are fairly in growth let the day temperature from fire heat be 50° to 55°, rising to 60° to 65° from sun, increasing the ventilation at 55°, and close at that temperature, leaving, however, a little ventilation on day and night, 40° to 45° at night from artificial heat will be sufficient. May Duke, Black Tartarian, Elton, and Governor Wood are suitable for forcing.

THE FLOWER GARDEN AND PLEASURE GROUND.

Propagating Dahlias.—As a rule plants with one single stem or those struck the same season are the best for planting, one strong branching stem being preferable to several weakly ones proceeding from an old stem and tubers. Any old roots that have been stored, if set on the inside border of an early vinery or Peach house and covered with soil, will soon give plenty of cuttings, or they may be packed in boxes and set on a gentle hotbed, where they will grow more rapidly. When the shoots are about 3 inches high take them off with a heel and dibble them singly in the centre of 2½-inch pots filled with sandy soil, and plunge in a gentle hotbed. Tops of shoots will also root readily if similarly treated, but they must be taken off before the stems are hollow, or they will not strike. When rooted they ought to be gradually hardened off, and will be greatly improved by a shift into 5-inch or larger pots. Dahlias, notably the single varieties, may also be raised from seed. Sow this now in a pan, and plunge in a mild hotbed. The seed germinates readily, and the seedlings may be pricked off either singly in small pots or thinly in boxes, in which they may remain till bedding-out time.

Dahlias worth Growing.—With so many superior varieties to select from, it is unwise to keep any that are not first rate. Many of the single-flowering varieties are very handsome, some of the best being Alba or White Queen, Avalanche, Canary, Cetewayo, Cicero, Evening Star, Firefly, Gracilis superba, Harlequin, Mary Anderson, Miss E. Terry, Paragon, Rotundity, Rose Queen, Scarlet Defiance, Sunset, Terra-cotta, and Yellow Gem. For affording abundance of pretty little white blooms Pompon Guiding Star or White Aster is to be commended, while the Cactus-flowered section comprise several popular varieties of great value to those who require many cut blooms. Juarezi, tall-growing and very showy; Constance or Ariel, white and very serviceable; Mrs. Hawkins, pale yellow, much admired; and Mrs. Tait, white with fimbriated edges, are all worthy of a place in every garden. Glare of the Garden, both crimson and red, are of dwarf habit and very free; and Cochineal, of much the same habit, is of a richer colour and more attractive than either of them. If dry roots of any of these can be bought procure them at once and start propagating.

PLANT HOUSES.

Adiantums.—Where well hardened fronds are in demand the whole of the year it will be necessary to forward plants into growth by placing them in a temperature of 60°. Directly they are starting transfer all that need it into larger pots. In doing so the roots should not be disturbed further than is necessary to remove the old drainage. If the plants already occupy as large pots as it is intended to grow them in, the plants may be cut into two, and then potted into the same size as they were originally growing in. This operation does not injure them seriously, in fact they quickly recover and soon grow vigorously. It is a mistake to cut them up severely for the purpose of increasing the stock, in fact the system cannot be too strongly condemned. The plants are weakened in time by the constant removal of their fronds, and in order to keep a stock in the most robust health a few should be raised by spores annually, which permits plants declining in vigour to be thrown away. Repot young stock without disturbing the roots. Spores may be sown at once on the surface of pots or pans filled with loam and peat in equal proportions, with sandstone or bricks broken fine freely mixed. Nothing is gained by the surface being made too fine. After sowing water with a fine-rose can and cover with a square of glass. The great object in achieving success is to place the pots or pans in a warm position where a uniform temperature and moisture can be maintained without having to water the surface constantly. This is best achieved by plunging the pots to the rim in moisture-holding material, and then covering the glass with damp moss. When the fronds of Adiantum cuneatum are required for cutting, the plants should be potted in three parts of good fibry loam and one part of leaf mould, this being rendered porous by the liberal addition of sand.

Davallias. — Repotting all plants that need it should be done directly they display signs of growth. It is a mistake to delay repotting these plants until the sun gains strength and renders heavy shading necessary long before it would otherwise need to be applied. These plants do not care for a deep rooting medium, but enjoy liberal

surface room upon which their rhizomes can creep. Pans are the most suitable, and these should be liberally drained. Very few of the varieties need potting below the rim of the pans, in fact only those that do not creep. Use for a compost rough fibry peat and loam in equal proportions, to which should be added liberal quantities of coarse sand and charcoal in lumps. Nearly all Davallias do well in baskets and add materially to the attractiveness of any structure in which they may be suspended. D. Mooreana creeps rapidly round the sides of a basket, and the same may be said of D. dissecta, D. bullata, and others. Many of the smaller growing species are admirably adapted for cutting, and when grown in quantity yield abundance of fronds that are highly prized, for they arrive fresh and last a long time in that condition after undergoing a railway journey of several hundred miles.

Polystichum proliferum.—This is a grand Fern for decorative purposes in from 2 to 5-inch pots. It is readily increased by keeping two or three plants in pans and pegging down the mature fronds, all down the centre of which quantities of young ones are produced. Those pegged down in autumn will be ready for cutting off, for all the young ones are rooted. Transplant them into pans or boxes until they are ready for placing into pots. If two or three are planted together instead of singly the plants are fuller and more beautiful when they attain a decorative size. When grown singly the plants are too thin for many purposes.

Pteris tremula.—Transfer small plants from 2 into 4 or 5-inch pots, in which they will make handsome decorative Ferns. For a variety of purposes they are beautiful in a small state. Sow spores, and treat them the same as advised for Adiantums.

Lomaria gibba.—This is one of the most attractive Ferns in a small state for decoration. Place those in 3-inch pots into others 2 and 3 inches larger. If spores are sown at once and the young plants afterwards grown on in heat they will be excellent by autumn in 5-inch pots. The same may be said of Blechnum corcovadense and Nephrodium molle ; the latter when growing freely must not be grown too warm, or it will certainly be attacked by scale.

THE BEE-KEEPER.

NOTES ON BEES.

EARLY ACTIVITY.

On a mild day in January, with a temperature of 54°, the bees were out in myriads, and by ten in the morning, to prevent their leaving the garden, I gave them a supply of both water and pea meal. Before my hand was withdrawn from the feeder the bees were in working upon it. Most of the hives carried a great quantity of it, as they also did of water, carrying at both at 4.30 P.M. when getting dusky. The day being so exceptionally fine I remained mostly outside, watching and enjoying the movements of the bees as also the flowers. So great was the growth on that day, Snowdrops that were barely peeping through the ground in the morning were up half an inch or more at night, and Rose bushes were pushing forth their buds. But what was even more interesting than all that was the enormous number of young bees upon the alighting boards and taking short flights.

Hives that I mentioned in an article in December as having turned out the last of their drones on the first day of that month were still clearing them out on that eventful day. The hive that I mentioned having the appearance of breeding much at the same date, and supposed to have a young queen, fertilised as late as the 27th October, has turned out exactly as I supposed. So numerous are the young bees that the hive is already perceptibly increasing in strength, and should the breeding continue at the same rate for a month or two longer it will be necessary to enlarge the hive. What was even more interesting than so many young bees were the drones flying out and in without the slightest interruption. Whether these were young or old ones I do not know.

Altogether this hive has had no parallel in all my experience. It was my best hive during last summer, and was the weakest one throughout the whole of the winter and spring months, and located in a Stewarton hive of the old type, wrapped in a piece of old sacking, over which a piece of inodorous felt is tied, and on the top a few pieces of carpet. A piece of semicircled galvanised iron placed over all sends the water off, keeps all dry, and the bees comfortable ; the cheapest and best of all coverings. Plenty of food, pollen, and a young fertile queen at the head of plenty of bees are the best stimulants and the only ones bee-keepers should attempt to provide their bees with. To prevent over-propolising, the hives should be made tight, and all superfluities, such as excluder zinc, should be kept out of the hive.

How this hive, so far advanced now, will turn out during summer, I know not, but I have every faith that my weakest nuclei will perhaps surpass my present very populous hives, as they have almost invariably done in past years. I certainly do not over-estimate the ulterior advantage of the present advanced state of some of my hives ; still there can be no doubt in the minds of reasonable persons, that hives of such a nature, in the hands of bee-masters who are situated in early districts, must be a decided advantage. Then what a world of troubles and disappointment are disposed of in the proof, to those who have been taught that to be successful with bees a certain but great amount of manipulation and artificial work were necessary with bees before they would even respond to the dictates of Nature. Happily for bee-keepers the whilom pupils are becoming teachers, by and through observations made, demonstated to them from living proof, contrary to what they, in their novitiate days, had been taught.

WINTERING BEES.

I have more than once in the pages of this Journal shown that in this country the best and safest mode of wintering bees with the least amount of trouble, was to leave the bees alone on their summer stand, and with the same dress or covering. To imitate Continental or American bee-keepers in this, or to offer advice to them on the subject, is, in my opinion, assuming too much. The Syrian bees excepted, I have never known bees suffer much from a low temperature, provided they had the opportunity shortly thereafter of airing themselves in a clear atmosphere and the ground free from snow. It is the latter that depopulates our hives, which judicious ventilation and confinement prevent. A protracted season with a very low temperature tell sadly against the bees. But in reality how seldom does this occur. I have never, in all my experience, known bees to be kept within doors throughout November or January. In December I have, but never saw November or January pass but the bees had an airing on one or more days. When bees are kept in confinement during the winter months it matters not what the day is after being set at liberty the bees will be out and fly. That would be all very good if a proper day could be decided upon for their release, but unfortunately in this country the weather is so variable and treacherous that a fine morning is often followed by a cold day, and often till far on in the spring, when it proves fatal to thousands of hardened bees. The longer bees are confined in hives the less able they are to stand the vicissitudes of the weather when liberated. Bees which have been kept upon their summer's stand, after the first flight (which often takes place in January), are more able to fly out and return to their hive than before. It is therefore evident that a flight in January conduces more to the health of the bees and their preservation than if they had been confined in any cellar or structure whatever built expressly for preserving bees. Owing to the loss of bees that in many cases and seasons that is sure to take place after confined bees are liberated, not speaking of the extra expense and trouble involved in preparing a cellar, placing the hives therein, and thereafter returning them to their original stands.

Bees commence breeding soon after the shortest day, and as that proceeds the desire to fly out becomes greater every day, and they cannot be kept healthy unless when in a semi-listless state at a temperature of about 45°. Neither need the fact be overlooked that bees when kept in confinement are as sensitive to the change of temperature outside as if they stood there, and when the temperature rises confined bees will assuredly become active and restless, which tends greatly to aggravate abdominal distension, encouraging incipient disease, which may in all probability render every hive confined unprofitable.

Looking at it from every point of view I can see no advantage to be gained by wintering bees in cellars of any construction. Doubtless some may attribute profit in summer to wintering bees in cellars, but I am inclined to think that it will end very much in the way that stimulating feeding and spreading brood has done, and those who advocate it now or are experimenting on old plans will be the first to denounce the practice, and probably claim the ideas of others following the more natural plan of letting bees have their liberty throughout the year.

YOUNG QUEENS.

The hive referred to in the foregoing as breeding so much is one of the best lessons that a bee-keeper could have, and a good proof of the value of introducing young queens at intervals throughout the season. I have frequently pointed out the great advantage of introducing young queens early in July to all stocks intended for the Heather, as well as the importance, showing the advantage to be derived from joining two or more stocks together when at all practicable. But I am afraid enough has been said upon the caution required to maintain the strength of the stock when an unfavourable change of weather takes place. Although a young queen deposits many eggs, and it is for that purpose the introduction of young queens at that season is advised, so that there will be many bees hatching out some time before the Heather is in bloom and able to carry in much honey when it is to be had. But although all that is done and the hive full of brood and promising in every way, a wet day or two may (and frequently does) cause the bees to draw every egg and unhatched bee in the hive, to prevent which the bee-keeper must be on the watch, and should an unfavourable change come feeding must be resorted to.

Naturally a change to a new place encourages breeding, but at that season a few wet days encourages the drawing of brood, which nothing can restore to the loss of all possible after honey gathering. The bee-keeper should therefore be impressed with the above fact, and never allow his bees to start drawing brood at any time before the honey flow. The weather experienced at the moors is more often of a backward nature than otherwise, and often a week at the close of the Heather is all the bees ever get. Two things are therefore necessary—viz., to have all hives prepared with bottom feeders for that and every other emergency, and be sure to be liberal with the syrup and in time before brood drawing commences. Those who have not their hives provided with bottom feeders should take the hint, and remember not to be too late in feeding, because there is no remedy if neglected, and there can be no honey without bees.—A Lanarkshire Bee-keeper.

TO CORRESPONDENTS

*** All correspondence should be directed either to "The Editor" or to "The Publisher." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Books on Orchids (*H. G. A.*).—There are several works on Orchids, but they differ greatly in price, some of the best being those illustrated with coloured plates. The following may be mentioned as likely to suit you:—"The Orchid Growers' Manual" and "Orchid Album," published by Mr. B. S. Williams, Victoria and Paradise Nurseries, Upper Holloway. The "Manual of Orchidaceous Plants," published by Messrs. J. Veitch and Sons, Chelsea. Burbidge's "Cool Orchids" (Allen & Co.); and Castle's "Orchids, their Structure, History, and Culture," published at this office, and of which a fourth edition is now in preparation. You ought to succeed with the aid of these works and the instructions supplied in this Journal.

Carpet Bedding (*E. W.*).—You can obtain all the particulars of the work you name by writing to Mr. A. Graham, Garden Superintendant, Hampton Court Palace, Kingston-on-Thames.

Primula Flowers (*F.*).—The colour is bright but evidently variable, yet not so rich as other varieties in cultivation that have also much larger flowers. Your variety is doubtless worth growing for home decoration, but we are not able to say it possesses any particular commercial value.

White Cineraria (*T. S., Aberdeen*).—The flowers are not developed, and although we cannot regard the variety as a "weed," we have seen many better than this promises to be. We do not suppose it will have any commercial value, though it may be acceptable for home decorative purposes, especially as, so far as we can judge, the plant appears to be dwarf in habit and floriferous; but the flowers are defective as regarded from the florist's standard of excellence.

Ammoniacal Liquor (*Subscriber*).—This is not of uniform strength and value, consequently a fixed quantity of water cannot be stated as generally suitable. We have used large quantities of gas liquor mixed with about six times its volume of water, and it improved the pasture to which it was applied; but the liquor was produced on the premises and had neither to be bought nor carted very far, or so much of it would not have been used. You had better try a few experiments at once with the liquor diluted at the rate of from four to ten times its volume, and note the results before its general application.

Large Beetle (*W. O., Manchester*).—This is one of the larger aquatic British beetles, Dytiscus marginalis, a carnivorous insect both in its mature and larval stages, but though passing its life chiefly in ponds or ditches, as a beetle, it takes occasional excursions upon land. It is not in any way destructive to plants, and its presence under the floor of a greenhouse seems difficult to account for. The likeliest explanation is, that it had somehow been brought to the place as a larva or grub, had then gone underground and changed to a chrysalis, but on becoming a beetle it died imprisoned, being unable to extricate itself.

Woodlice in Mushroom Beds (*T. C.*).—We know of no better plan than that of Mr. R. Parker, as described on page 116 of "Mushrooms for the Million." It consists in placing dry old dirty and decayed boards face to face under the covering of the beds. The woodlice crawl between them, and the boards are taken with the lower edges pressing against each other, trough fashion, and the contents jerked into water. Thousands of woodlice have been caught in that way, and large houses and beds cleared of the pest. New and smoothly planed boards are useless for the purpose, for the simple reason that the insects cannot crawl between them. Mr. R. Holmes, who is one of the best Mushroom growers in the kingdom, and who has grown several tons, has found this method of eradicating woodlice perfectly satisfactory.

Cutting Down and Renovating Camellias (*A Hampshire Subscriber*).—No plants endure cutting better than these. You may cut them down as close as you desire, and then, if the root-action is even fairly good, and the plants are kept in a warm house and syringed frequently, young growths will issue from the old wood freely. If they are cut down entirely, as if pruning a Rose tree, and the roots are much crowded or in inert soil, they may have a great part of that soil removed, reducing the old balls considerably, and giving them a fresh sweet compost of turfy loam and peat in equal parts, and a plentiful admixture of silver sand. By carrying out this practice many tall and unsightly Camellias have been transformed into dwarf bushes bearing healthy foliage and fine flowers. You may cut them down whenever you can afford brisk heat with moisture to induce them to break freely.

Pruning Clematis—Dissolved Bones (*F. I.*).—Clematis pruning was described on page 95 last week, which you would no doubt see after sending your letter. Dissolved bones are more speedy in effect than either steamed or ground bones, as by the action of sulphuric acid nearly all the constituents of bones are converted into soluble compounds, and are at once fitted to become the food of plants, hence the value of superphosphate as manure. Next comes bone dust, which produces effect sooner than crushed or half-inch bones in consequence of the speedier decomposition. Steamed bones are very valuable on account of the organic matter not being extracted as in boiling, and they are speedy in effect and durable. You will not err in using bone dust. The other, however, can be had through any agricultural or horticultural manure dealer.

Chemical Manures (*North Herts*).—The addition of either nitrate or muriate of potash could not impair, and might probably improve, the mixture for your soil and purpose. Of the two forms of potash the nitrate is the more costly and possibly effective, but many experimentalists have found the muriate the more economical. The quantity of fertilisers to apply profitably can only be determined by the condition of the soil as to fertility. Assuming yours is poor rather than rich you may apply 2 ozs. each of the two mineral ingredients at once, pointing them in, then following with a sprinkling of nitrate of soda or sulphate of ammonia in showery weather when growth fairly com-

mences; but strong applications of these induce the growth of leaves at the expense of flowers and fruit. Possibly an ounce to the square yard would not be excessive in your case, but you had better exercise judgment in the matter, and we think you will not make any serious mistake.

Unfruitful Trees—Root-pruning (*J. G.*).—Thousands of large trees bear no fruit because spring frosts destroy the blossoms. The question in your case is whether the trees blossom or not, and this you do not mention. However, you cannot err by removing the suckers that spring up, separating them close to the roots. The dying of the branches suggests that the soil may be wet, therefore the wood does not ripen. If water stands within 3 feet from the surface the land needs draining to more than that depth. The extent to which the roots of trees should be cut depends entirely on the character of the wood. If it is luxuriant and blossomless, then the trees should be well undermined, starting them 3 or 4 feet from the stems, and cutting off the roots that strike downwards, reserving all of a fibrous nature and laying them in fresh soil as near the surface as is convenient, mulching with manure to prevent the roots drying in summer. If the growth is short and stubby, blossoming freely, such root-pruning would do harm, though the old soil might be removed from the roots, adding fresh of a loamy character, and covering it with a thick layer of manure to be left to decay. This would stimulate root action, then better and healthier growth would follow. Some varieties of Plums and Apples are naturally shy, while others are abundant bearers.

Unheated Peach Houses (*C. F.*).—There is grave danger in forcing the blossoms out early of their being ruined by after frosts with no blinds for protection. It is not wise to forward the blossom in the way you describe—viz., "keeping the house close for the past two or three weeks;" indeed, the house should be kept open, so as to retard the blossom as much as possible. We have a house of similar length. The lights are off, and will remain off until the middle of March, unless the weather prove unusually mild, and so accelerate the blossom as to cause it to show colour, when the lights will be put on, in order to keep it dry and insure immunity from damage by frost. The difficulty is to keep back the blossom until about April, when we usually have weather that enables frost to be excluded by early closing the house and maintaining a dry atmosphere. After setting and the weather becoming warmer much can be effected in accelerating the ripening by judicious early ventilation—moderate ventilation during the day, so as to secure a good heat, and early closing so as to husband the sun heat—securing a long day's work. Fruit can be had ready for use full three weeks before the same varieties are ripe grown outside. If fruit is wanted at the earliest period very early sorts should be grown, but these are not equal to the succeeding kinds in size, colour, and quality.

Cool House Orchids (*J. F. C.*).—We should not advise you to undertake the culture of cool house Orchids in a "hotbed and a greenhouse," as you will probably fail, and it is very discouraging to amateurs to find some of their valued plants dying after they have been in their possession a month or two. Greenhouses suit but few Orchids, and even for them they require a special preparation. Some of the hardy Orchids and Disa grandiflora can be grown in this way, but Odontoglossums would not succeed long in an ordinary greenhouse. They require a constantly humid atmosphere and protection from the direct rays of the sun, while the usual occupants of greenhouses need liberal ventilation, a drier atmosphere, and will endure much exposure to sun. To ensure satisfactory results you must either devote a portion of the house to the Orchids, separating it from the other part by a glass or wood partition, or you must give up the other plants. When you have arrived at a decision on these points we shall be able to give you some further information. When Orchids are in flower less moisture is necessary in the air, as the flowers are liable to be spotted and damp. The plan of standing the pots on inverted saucers in zinc trays is a good one in several ways, as it not only ensures a regular supply of moisture, but prevents the attacks of slugs, woodlice, &c., which are apt to be troublesome.

Planting Marechal Niel Roses (*S. S.*).—Although we should foresee no difficulty in securing at least three main growths from healthy and well-managed plants established 3 feet apart, you can accomplish your object equally well by planting 2 feet asunder. When the plants are vigorous more than the desired number of shoots will probably start, and the removal of the least suitable will then be necessary. If one here and there should be extra robust, taking a very decided lead of the others, its point may be nipped off, choosing the most suitable of the growths succeeding for extension with others that were not topped. You cannot expect absolute equality in the strength of all the shoots, nor is it necessary, though the less the disparity the better. Proceed on the lines indicated, topping the shoots as they reach the top of the house, and there will be no difficulty, with good management, in covering the roof with wood that will produce flowers in abundance. When the object is to establish strong permanent plants, and these have long shoots when planted, they should be cut down to good buds near the base of the shoots after the upper buds have pushed an inch or so. Many Maréchal Niel Roses are ruined by allowing them to bear all the blooms possible the first season and before the roots are plentifully and actively working in the soil. Secure strong root action the first year, and strong growth will follow. If the plants are dug from the open ground they cannot well be too closely pruned soon after planting, because in that case the roots will have been, of necessity, mutilated, and the tops must be shortened correspondingly to restore the lost balance between root and branch.

Span-roofed House (*J. E.*).—The site appears a good one and the arrangement for stokehole admirable. We should have the house 12 feet wide, the side walls 3 feet high above the ground level, 9 inches thick to within three courses of bricks of the top, which should be 4½ inches and built in cement, by which you would gain 4½ inches on both sides inside. We should have side lights about 2 feet high, and made to open the entire length, being hinged at the top, and opening outwards from the bottom by crank and lever movement. The house would therefore be 5 feet high at the sides, and it should be about 8 feet 6 inches high in the centre from the floor to the ridge. On the south-east side have top lights 2 feet wide running the whole length of the house, and raised by crank and lever movement similar to the side lights. The end next the stokehole may be a blank wall, and if you could arrange to have a potting-shed over the boiler, a door leading from the greenhouse, it would be a great convenience. Have the path 2 feet 6 inches wide up the centre, with open lath stage on both sides level with the top of the recessed brickwork, the wall forming rests for the stage on that side. Two rows of 3-inch pipes on each side would be required for heating, and should be placed beneath the staging but clear the floor. On one side you could arrange to have a bed of about 4 feet in length and the width of the stage walled all round, and the hot-water pipes going through it; they being covered with boards would form a chamber, and covered with a frame would make an excellent place for raising plants from cuttings. Slates would be better than the boards, and they should not be placed quite close, but have slight spaces between to let water pass away. The cover on the bottom of the frame should be level with the stage on which the frame—about 9 inches deep in front and 1 foot at back—should rest. Let the south-west end be glazed down to the level of the brickwork at sides, having corresponding brickwork at the end to that of the sides. A small boiler would meet your requirements. The pits would be very useful for hardening off plants.

Repotting Stephanotis and Camellias (*F. G.*).—A pot 2 feet in diameter is large enough for a fine exhibition specimen Stephanotis, and as your plant is at present established in such a pot, yet needs repotting, you may safely reduce the mass of soil, disentangling some of the roots, in the meantime washing the pot well with hot water, and it will quickly dry for using again. But we should not ruthlessly chop a slice off all round the ball of soil as you propose, but pick out the soil with a stick, and preserve all healthy roots, removing sufficient of the old soil to enable a good quantity of new being placed under, around, and over the roots and soil as reduced. Drain the pot well, and mind the old soil is not dry in the centre, nor should it be very wet. Let the fresh compost be of a turfy character, and composed mainly of fibrous loam and peat, the former preponderating, with some broken charcoal and sand added to ensure porosity, and if a tenth part of dried cow manure, crushed into small particles, be added, it will improve the compost, as would a twentieth part of bonemeal. Press the whole down into a firm yet slightly elastic mass, leaving a space of 2 inches from the surface of the soil to the top of the pot for subsequent top-dressings, and holding sufficient water for passing through the entire mass of soil; be careful, however, not to overwater at the first, but rather keep the plant fresh by syringing frequently, and shaded as may be needed in bright weather. Still-water must be given before the soil gets dry, withholding it so long as it remains decidedly moist, remembering that extremes of both dryness or wetness will check free root-extension into the new soil. If you make no mistake in carrying out the work of reducing, repotting, and subsequently watering, your plant will thrive. It will be better plunged in gentle bottom heat, the temperature of the house ranging from 60° to 85°. The same mixture will be suitable for the Camellia, and any inert soil may be removed from the roots, only placing the plant in a pot just large enough to enable fresh soil being conveniently packed round the roots. Exercise good judgment in watering, syringing more or less freely according to the weather, also the temperature in which the plant is placed, from 50° to 65° being suitable for inducing free yet healthy growth, though the plant will grow very well, though more slowly, in a cooler house.

Vines not Thriving—A Mistake (*S. R.*).—We fail to find evidence of the presence of the phylloxera on the roots sent, but they are almost in as bad condition as if they had been attacked by that pest. We should uproot them and procure fresh Vines, shortening now, and planting in spring as advised in "Work for the Week" of the present issue, and in soil similar to there described. You now tell us you buried "some legs, &c., of horses in the border;" but you "do not think the Vine roots have got down to them yet." If they had we presume you would have attributed their condition to the carrion. Why, then, have placed it within their reach? If you have been a reader of the Journal for many years we are astonished you should bury "legs, &c., of horses" in the border; and if you have not long been a subscriber so much the worse for yourself. Whether the roots have reached the poison or not, we suspect they have scarcely moved since they were planted, or rather it is certain that many of them have moved backwards. A few may have extended somewhat, but only sufficiently to prevent the Vines dying. After your admission we have lost confidence in your Vine border; but even assuming it to be good where the Vine roots are, your treatment has been faulty, and in one important particular different from what we have many times advised. It is the reverse of good practice to plant Vines in the autumn and force them into action in February in a temperature of 55° to 65°. That is the way to drain the rods of sap before it is possible for the roots to move for absorbing nutriment to sustain the growth; indeed, we suspect the roots were

drained as well as the rods, hence their miserable condition. The Vines ought not to have been forced into growth at all, but on the contrary kept cool and the buds dormant as long as possible. By the time of starting naturally, or with little or no artificial heat, the border would have been at the same time warm enough for inciting root growth with the expansion of foliage, and the soil and management being good, stout canes would have followed and ripened in the autumn; but as stated in the instructions to which you have referred, spring, after growth starts, is the best time for planting Vines, shortening them several weeks previously, or if not shortened removing the swelling buds from the upper portion of the rods down to where the leading cane is desired to start from, and as a rule the lower this is the better will be the growth if it starts from a good and well developed bud. We are sorry for your failure, but if you proceed intelligently on the lines indicated you will have good canes in the autumn. You will only lose time by attempting to restore the present Vines.

Heating Houses (*J. D.*).—A check end saddle boiler, as you prefer that form, will answer well. No. 2, 36 inches long, 20 inches wide, and 18 inches high, all outside measure, would be capable of heating the piping you will require, which is shown by the direction of the arrows on the plan, and where those only go to the end of a structure it must be understood that the returns are under or beneath the flows. The flow main would leave the boiler at A, pass into the span-roofed house at J, and across the end inside to I. Along both sides the house two pipes will be necessary for top heat—viz., a flow and return over each other, and an H-pipe with throttle valve at C, and a throttle valve at D, both on the flow and return, so as to shut off the heat from the second compartment, or D E, opening the throttle valve in the H-pipe when the second compartment is not on, and closing it when the valves in D E are open or heat is wanted in the second compartment as well as the first. The flow is taken across the end beneath the pathway to I, from I to H, where is an H-pipe similar to C, and valves at G similar to D. At the end of the second compartment the pipes for top heat return by a syphon, where must be an air pipe, E and F. It is not necessary to have any pipes across the end M, and the bed there is not a good arrangement. For bottom heat you will need a flow and return in each bed, similar arrangements being made at the end K for the water to return by having a cross-pipe with throttle valve, open when the second compartment is not wanted heated, and the valves on the bottom heat pipes in that compartment are closed, but closed when the heat is wanted therein, the valves at L being open. Similar arrangements will need to be made at O as regards the cross-pipe and valve and the valves at N as are made at K and L. The bottom heat pipes need only have a slight rise, the flow to E, where must be an air pipe, and the return should have a corresponding decline from that point. Similar remarks apply to the other side of the bed as regards the rise and fall of the flow and return pipe, also air pipe at F. By this arrangement you can heat the two compartments of No. 2 separately or together. No. 1 will be sufficiently heated by a flow and return pipe. With a valve at S on the flow, and another at R on the return, the heat will be shut off. The flow is shown along the front and the return by the side of the pathway. Across the end U to T a cross pipe will be needed, and on that a throttle valve; open when heat is not wanted in the second compartment, closed when heat is needed in the compartment. Valves will be needed at V and W in the second compartment, and an air pipe at the highest point—viz., Y, the return pipe being taken across to X. The pipes in all cases should be 4-inch, and the boiler should have a feed cistern in the stokehole, and it should be so fixed that it will only about three parts fill the flow pipes for top heat when cold so as to leave space for the swell of the water when heated, or a swell cistern should be provided; but by allowing space at the air pipe end of the highest pipes—*i.e.*, top heat ones, the pipes being about three parts full, there is no need of the overflow cistern, which, except in large arrangements, is neither desirable nor necessary. You can grow Mushrooms in lean-to frames either under glass or with wood shutters outside either No. 1, or No. 2, or both, the lines 3 feet from the walls of the span being intended, we presume, to represent the position for the beds, and also that at the back of the lean-to, the latter being an excellent place for growing Mushrooms in summer. You will require your plan back, and can have it by sending a stamped directed envelope addressed to yourself; and if you find some of the letters indistinct you will perceive it is the result mainly of your not having drawn the plan to a larger scale.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials suffieing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*J. J. M.*).—1, Gloria Mundi; 2, Northern Greening; 3, Golden Reinette.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*A Young Gardener*).—1, an immature frond, quite unrecognisable; 2, Onychium japonicum; 2, Adiantum pubescens; 4, Asplenium proliferum; 5, Nephrolepis exaltata; 6, Aspidistra lurida variegata. (*G. H.*).—1, A variety of Croton, but it cannot be determined; 2, A Bamboo, perhaps Bambusa Fortunei; 3, Panicum variegatum; 4, Cœlogyne occellata; 5, Tradescantia variegata; 6, Ficus Parcelli. (*R. W.*).—1, A fine variety of Dendrobium Wardianum; 2, Odontoglossum madrense; 3, Cœlogyne Lemoniana.

COVENT GARDEN MARKET.—February 8th.

No alteration this week.

VEGETABLES.

	s.	d.		s.	d.		s.	d.		s.	d.
Artichokes, dozen	1	0	to	2	0	Lettuce, dozen	0	9	to	1	3
Asparagus, bundle	0	0		0	0	Mushrooms, punnet	0	6		1	0
Beans, Kidney, per lb.	1	0		0	0	Mustard and Cress, punt.	0	2		0	0
Beet, Red, dozen	1	0		2	0	Onions, bunch	0	3		0	0
Broccoli, bundle	0	0		0	0	Parsley, dozen bunches	2	0		3	0
Brussels Sprouts, ½ sieve	3	6		4	0	Parsnips, dozen	1	0		0	0
Cabbage, dozen	1	6		0	0	Potatoes, per cwt.	4	0		5	0
Capsicums, per 100	1	6		2	0	,, Kidney, per cwt.	4	0		0	0
Carrots, bunch	0	4		0	0	Rhubarb, bundle	0	2		0	0
Cauliflowers, dozen	3	0		4	0	Salsafy, bundle	1	0		1	6
Celery, bundle	1	6		2	0	Scorzonera, bundle	1	6		0	0
Coleworts, doz. bunches	2	0		4	0	Seakale, basket	1	0		1	3
Cucumbers, each	0	6		1	3	Shallots, per lb.	0	3		0	0
Endive, dozen	1	0		2	0	Spinach, bushel	1	6		2	0
Herbs, bunch	0	2		0	0	Tomatoes, per lb.	0	6		1	0
Leeks, bunch	0	3		0	4	Turnips, bunch	0	4		0	6

FRUIT.

	s.	d.		s.	d.		s.	d.		s.	d.
Apples, ½ sieve	1	6	to	3	6	Oranges, per 100	2	0	to	5	0
Nova Scotia and Canada barrel	10	0		18	0	Pears, dozen	3	0		6	0
Cobs, 100 lbs.	45	0		0	0	Pine Apples, English, per lb.	0	0		0	0
Grapes, per lb.	2	0		3	6	St. Michael Pines, each	3	0		5	0
Lemons, case	10	0		15	0						

PLANTS IN POTS.

	s.	d.		s.	d.		s.	d.		s.	d.
Aralia Sieboldi, dozen	6	0	to	12	0	Fuchsia, dozen	0	0	to	0	0
Arbor vitæ (golden) dozen	6	0		9	0	Genista, per dozen	6	0		12	0
,, (common), dozen	0	0		0	0	Hyacinths, dozen	6	0		12	0
Azalea, dozen	24	0		42	0	,, (Roman), doz.	9	0		10	0
Begonias, dozen	0	0		0	0	Hydrangea, dozen	0	0		0	0
Cineraria, dozen	8	0		12	0	Lilies Valley, dozen	18	0		24	0
Cyclamen, dozen	12	0		24	0	Lilium lancifolium, doz.	0	0		0	0
Deutzia, per dozen	6	0		9	0	Marguerite Daisy, dozen	9	0		12	0
Dracæna terminalis, doz.	30	0		60	0	Myrtles, dozen	6	0		12	0
,, viridis, dozen	12	0		24	0	Narciss, per dozen	8	0		10	0
Epiphyllum, dozen	10	0		18	0	Palms, in var., each	2	6		21	0
Erica, various, dozen	9	0		18	0	Pelargoniums, dozen	0	0		0	0
Euonymus, in var., dozen	6	0		18	0	,, scarlet, doz.	6	0		9	0
Evergreens, in var., dozen	6	0		24	0	Poinsettia, dozen	0	0		0	0
Ferns, in variety, dozen	4	0		18	0	Solanum, dozen	9	0		12	0
Ficus elastica, each	1	6		7	0	Tulips, dozen pots	6	0		9	0
Foliage Plants, var., each	2	0		10	0						

CUT FLOWERS.

	s.	d.		s.	d.		s.	d.		s.	d.
Abutilons, 12 bunches	3	0	to	6	0	Lilies, White, 12 bunches	0	0	to	0	0
Anemones (French), 12 bunches	3	0		4	0	,, Orange, 12 bunches	0	0		0	0
Arum Lilies, 12 blooms	5	0		8	0	Lily of the Valley, 12 sprays	0	6		1	0
Azalea, 12 sprays	0	8		1	0	Mignonette, 12 bunches	3	0		6	0
Bouvardias, bunch	0	6		1	0	Narciss, white (French) 12 bunches	3	0		9	0
Camellias, 12 blooms	1	6		4	0	Narciss, various, 12 bchs	3	0		6	0
Carnations, 12 blooms	1	0		3	0	Pelargoniums, 12 trusses	1	0		1	6
Christmas Roses or Hellebore, 12 blooms	0	6		1	6	,, scarlet, 12 trusses	0	6		0	9
Chrysanthemums, 12 bchs.	12	0		18	0	Poinsettia, 12 blooms	2	0		5	0
,, 12 blooms	2	0		4	0	Primula (single), bunch	0	6		0	0
Cyclamen, 12 blooms	0	6		1	0	,, (double), bunch	0	9		1	6
Daffodils, Double, 12 bchs	6	0		12	0	Polyanthus, 12 bunches	0	0		0	0
,, Single, 12 bchs	8	0		12	0	Ranunculus, 12 bunches	0	0		0	0
Daisies, 12 bunches	2	0		4	0	Roses, Red, 12 blooms	6	0		9	0
Epiphyllum, 12 blooms	0	6		0	9	,, (indoor), dozen	3	0		4	0
Eucharis, dozen	4	0		6	0	,, Tea, dozen	1	6		6	0
Gardenias, 12 blooms	18	0		30	0	red, dozen (French)	1	6		3	0
Hyacinths, Roman, 12 sprays	0	6		1	0	,, yellow	4	0		9	0
,, French, 12 bunches	1	6		4	0	Stephanotis, 12 sprays	0	0		0	0
Lapageria, coloured, 12 blooms	1	0		1	6	Tropæolum, 12 bunches	2	0		3	0
Lilium longiflorum, 12 blooms	6	0		9	0	Tuberoses, 12 blooms	2	0		3	0
Marguerites, 12 bunches	2	0		6	0	Tulips, dozen blooms	0	9		1	0
						Violets, 12 bunches	1	0		1	6
						,, (French), bunch	1	9		2	3
						,, (Parme), bunch	5	0		7	0
						White Lilac, per bunch	6	0		7	0



SEED TIME.

Most welcome are the frost and snow which lock up the land and cover winter corn so snugly as we sit down to write this article. Nothing could possibly be more opportune than a spell of hard weather just as arrears of ploughing have been finished, for it will sweeten and shatter the soil so as to insure a fine seed bed, and with mild dry open weather towards the end of the month the sowing of spring corn will probably be done quickly and well. In view of the probability of such a seed time it will be well that

due care should be taken now to have seed, implements, and manures prepared for the work.

Before all things we must see that the seed is pure, clean, and of the best sorts for our land. At one time farmers generally were very remiss in this matter, the seed corn often being mixed, foul with weed seeds, and inferior in other respects. The yield was of course proportionately inferior, but prices before the depression set in were so high that even such slovenly practice on the land was profitable. Glad are we to know that a much greater degree of attention is now given to seed selection ; in point of fact we have reason to believe that many farmers have rushed to another extreme, and have given extravagant prices for special strains of seed corn, without that previous high cultivation of the soil which is so necessary to its profitable culture. The very fact of the purchased seed being superior to home produce is sufficient to show that it was grown in superior soil, and must be sown in equally good soil to yield a crop of equally good corn. Nothing can surely be more patent, and yet we know that it is often overlooked, with the inevitable result of failure and loss. By all means let us have good seed, but we must also have clean, dry, fertile soil, and every other condition of high culture, for if one thing be wanting all our efforts for success or improvement will be in vain.

We hold that corn-growing may still be done profitably in this country under the best combination of science with practice, but we know there are others who boast of the teachings of long experience in support of their views that corn-growing has ceased to be profitable. Quite recently we saw a statement which went to show that Wheat cannot be grown at present prices without a clear loss of £2 17s. per acre. To prove this figures were given, but we never saw a more glaring example of the truth of the axiom that figures may be made to prove anything. Rent and taxes were put at £2, labour at £7, and manure at £5 12s. per acre. Now we think this statement to be altogether false and misleading, for we can certainly afford to strike off half the amount of the labour item, and feel assured that our Wheat will be well cultivated, harvested, threshed, and delivered. Then as to rent. Why, in the great corn-growing district of East Anglia the reduction of rent has been so great that £1 an acre is considered to be the average, including tithes, parochial rates, and the tenants' income tax under schedule B. It is true the rent of some farms near to large towns rules higher, but we can go as far as 30s. an acre for them, and yet grow Wheat at a profit. The most preposterous item is that of £5 12s. for manure, but we must explain that this amount is intended to apply to farmyard manure. Compare this with the last manure recommendation circular of the Sussex Association for the Improvement of Agriculture by Professor Jamieson, which shows that enough pure chemical manure for an autumn and spring dressing can be put on rail in London at a total cost of 31s. per acre. The formulæ are as follows :—

Per acre in autumn—Half cwt. nitrate of soda, quarter cwt. steamed bone flour, quarter cwt. mineral superphosphate. In spring—Half cwt. nitrate of potash, 1¼ cwt. nitrate of soda, quarter cwt. steamed bone flour, half cwt. superphosphate. But then, if farmers will not learn that chemical manures answer better than farmyard manure, why we can only say they deserve to fail. We intend using for our spring corn muriate of potash on an 80 per cent. basis, and we are offered this at £8 7s. 6d. per ton ; nitrate of soda at £9 5s. per ton ; bone flour at £5 10s., and superphosphate at £2 10s. Such low prices of these excellent fertilisers is certainly a matter for congratulation, and we shall turn them to full account by giving both winter and spring corn a liberal dressing, as we strongly recommend our readers to do. The manures should be procured at once, but they should not be mixed till a few days before required for use. Then either sow them broadcast and give the land one turn with the harrows before the drill, or if you have an excelsior drill, the manure and seed can be sown by one man and a pair of horses at the same time. We strongly recommend this drill as one of the best labour-saving appliances we have. Compare it with the old drills requiring three horses, two men, and a boy to sow the corn, another man to broadcast the manure, and another to follow him with the harrows.

WORK ON THE HOME FARM.

The lambing is going on very well, we are glad to say, but care has to be taken not to expose the lambs to the cold weather, and they are kept in snug quarters in the large fold. We have reason to suppose that an overdose of ergot of rye caused the death of one ewe. This may be cited as an instance of the folly of trying to force Nature. When an animal is long in labour help must be given, but care should be taken not to attempt forcing natural effort by very strong doses of ergot. Do not suffer the lambs to be exposed to cold cutting winds, for if they are so exposed serious losses will be the inevitable result. Many lambs die when left out in a cold bleak fold at night. and we cannot wonder at it, but we do wonder how anyone with a grain of common sense can let them be so exposed. There can be no excuse for this, for if only a double row of hurdles is made around the fold, and the space between them filled with straw, there is shelter at once, and straw and hurdles are to be had on every farm.

Glad are we to say that at the last meeting of our local farmers' club we were able to induce several of the members to promise to try oatmeal as a substitute for barleymeal for pigs. Such meetings are capital occasions for an interchange of ideas and discussions of important points of practice. Among other matters we recently called attention to the best way of laying down land to permanent pasture, and that is a detail of spring work of which many men are ignorant, and we purpose again calling special attention to it in this Journal shortly. We have recently heard farmers loud in complaints of the scarcity of food on their pastures, and we know some who have already had to feed off their Rye ; yet we know that if only the pasture received due care and the requisite amount of cultivation it would not be bare even now. That is the point we wish to enforce, that every part of a farm requires culture, and none of the land should be left without its due share of annual care. Sustained fertility can alone insure full crops. To maintain this we must store the soil regularly with plant food so that it can never become exhausted. We shall then have an early and late growth so robust and sturdy as to suffer very little from unkind seasons. Severe drought must, of course, affect pasture, but it is the poverty-stricken neglected pasture that invariably succumbs to drought first.

MESSRS. SUTTON AND SONS' PUBLICATIONS.—The result of experiments with artificial manures on permanent and temporary pastures at Dyson's Wood, near Reading, have been published, and throw fresh light on this all-important subject. In instituting these experiments, Mr. Martin J. Sutton in co-operation with Dr. J. A. Voelcker has rendered great benefit to all who are engaged in the cultivation of the soil ; and we strongly recommend "The Dyson's Wood Experiments" to their serious consideration. A new and "Popular Edition" of Mr. Martin J. Sutton's "Permanent and Temporary Pastures" has been issued, and a copy is before us. It is a cheap reprint of the original edition, with plates of the Grasses uncoloured, and will be found useful to those of limited means.

OUR LETTER BOX.

Hen Dying (*W. Raynor*).—We are unable to account for the death of the fowl, but will hand your letter to the Editor of *Poultry*, who may possibly be able to formulate an opinion on the case.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				
1888. Jan. and Feb.	Barometer at 32° and Sea Level.	Hygrometer. Dry.	Hygrometer. Wet.	Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature. Max.	Shade Temperature. Min.	Radiation Temperature. In sun.	Radiation Temperature. On grass	Rain
	Inches.	deg	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 29	29.956	31.8	30.5	N.	37.2	38.1	30.4	69.8	26.3	—
Monday..... 30	30.121	27.4	25.9	N.	36.4	37.1	25.1	51.7	19.2	0.031
Tuesday 31	29.436	36.6	35.9	S.	35.8	41.2	26.3	64.4	22.8	0.1 3.
Wednesday.. 1	29.807	30.7	29.1	N.	35.7	33.4	29.9	63.4	29.3	—
Thursday 2	30.180	24.4	23.3	E.	35.3	37.8	19.1	48.4	16.1	0.039
Friday 3	30.019	37.3	36.9	W.	35.1	44.9	23.9	53.6	23.7	—
Saturday 4	30.207	42.8	42.0	W.	35.0	50.4	37.1	63.2	30.3	—
	29 964	33.0	31.9		35.8	40 4	27.4	59 2	24.0	0.203

REMARKS.

29th.—A little snow after 9 A.M., and damp for an hour or so, then bright sunshine for a time; fair afternoon, clear moonlight night.

30th.—Generally fine, with some sunshine. Snow in evening.

31st.—Very wet till 11 A.M., then cleared and bright for two or three hours. Shower about 5 P.M., and damp evening.

1st.—A sprinkle of snow in the early morning; beautiful day, but the ground remaining white in the shade ; clear cold night.

2nd.—Fine, but slightly foggy and cold.

3rd.—Cloudy morning; fine afternoon with some sunshine. Much warmer.

4th.—Fine and pleasant and very mild ; overcast evening.

A very changeable week with great variations of temperature, but as a whole decidedly cold. Temperature 4° below the average, and nearly 8° below that of the preceding week.—G. J. SYMONS.

THE ROYAL HORTICULTURAL SOCIETY.

CONSIDERABLY more than ordinary interest attaches to the meeting that was held on Tuesday, and which is reported on another page. As the last annual meeting of the Fellows held at South Kensington it must be regarded as an important event in the history of the Society, as important, indeed, as that at which it was determined to establish the Society in the then great centre of the fashionable world. Objections were urged against that step at the time in these columns, and it was strongly opposed as likely to end in failure sooner or later. It was not difficult to foresee that a conflict of interests must arise between what may be fairly described as a policy of gaiety and that embodying the legitimate claims of horticulture. That is precisely what occurred ; and while South Kensington has not gained by the alliance that was effected with Her Majesty's Commissioners as trustees of the estate, the Society was brought to the verge of ruin. Its independence was sacrificed on the altar of fashion, to which it was bound ; but the cords are cut at last, and it escapes, weakened, but not abandoned.

Now that a new course is determined, it would be most unwise to ignore the lessons of the past ; and it will not be disputed that the most momentous of all of them is that of incurring obligations disproportionate with the means provided for meeting them. The great mistake that stands out clear has been that of discounting the future. It has been felt that something must be done from time to time, and something has been done, but with no certainty that the action would bring the hoped-for results, and too often these were not realised, but, on the contrary, greater difficulties arose and had to be encountered. Enthusiasm is an admirable quality, and no great successes have been won without it ; and the same may be said of enterprise, but the former must be tempered by sound judgment, and the latter based on sound principles, or the ultimate issue may be the reverse of that anticipated. A throw of the dice may bring fortune or may bring ruin, this last being immeasurably the greatest contingency.

The Royal Horticultural Society has a long, if chequered, history, yet notwithstanding adverse circumstances that have impaired its influence and crippled its action, it has been of great service to the world of horticulture. More than any other agency it has stimulated the taste in gardening that has been established during the period of its existence, and this in turn has created a home industry which, in its entire scope and nature, is unequalled in any country beyond the seas, though in all of them, where the art of gardening is practised in its highest forms, its influence has extended beneficially. Under its charter it must be managed wholly in the interests of horticulture, and no one on its governing body can derive any personal advantage from the position he occupies. It is, if any institution is, the representative head of practical gardening in these realms, and as such should be placed in a position worthy of its name and nation. This can only be accomplished by a wide extension of popular support, and to command this support its affairs must be very judiciously managed by representative men. Though at present in a transition state, the Society has many friends, well-wishers, and anxious helpers. This has been shown by the committee that was recently formed, and which was made representative solely with the view of devising means and making provision for its future working ; and the suggestions and recommendations of this committee will doubtless receive, as they deserve, the most careful consideration of the Council.

This important body, as will be observed, is also elected on a broader basis, inasmuch as it not only includes the trade, but the professional gardening element. This appears to be a reversion in principle to that on which the first Council of the Society was elected nearly eighty years ago, only that Council included three *bonâ fide* gardeners—namely, Mr. W. Townsend Aiton, gardener to the King at Kew ; Mr. Thomas Hoy, gardener to the Duke of Northumberland at Sion ; and Mr. William Smith, gardener to Lord Liverpool at Coombe, Surrey. There was no representative nurseryman on the first Council, but a Covent Garden herbalist in the person of Mr. James Dickson ; indeed there was little trade to represent then in comparison with the position now. Two nurserymen are added now, and one gardener, Mr. J. Woodbridge, will no doubt be elected. Possibly more may be added in future, and such addition, as will be seen, would be no innovation, but exactly in accordance with precedent ; and gardeners are not men, as a rule, to encourage expenditure without full justification, or to sanction outlay without clearly seeing it would be profitably applied.

The safe policy to be pursued at the present juncture is a policy of economy. Spending money before it is earned, or while debts remain to be paid, is to say the least a risky procedure, and not likely to gain a large share of public approval. Let rooms and halls be secured so far as means allow ; but how stands the means ? Can more than £1500 be expected from Fellows in 1888 ? It is doubtful. Can less than £1300 suffice for Chiswick ? No. Here then we have £200. The establishment expenses of last year exceeded £800. Can they be reduced ? The fortnightly meetings cost £230. Can they on the same scale be done for less ? Then if the whole of the South Kensington Garden expenses, or say £600, be saved, where is the money to come from for West End rooms and an exhibition hall ? This question of means cannot be ignored ; and if the financial position is as stated, is it prudent to give £5 a time for a hall that will be unsuitable for tender plants over half the year, and which will depress by its emptiness ? Let the amount of gate money taken at South Kensington last year be ascertained and place it against the cost of the "Shows," and on this determine the "hall" question, for there is no certainty that the attendance would be greater in Westminster than at Kensington. The fortnightly "Shows" either weaken the Society or strengthen it. Let the facts on that point be ascertained before experimenting in the same direction. The meetings of the Committees with the plants and produce submitted to them are distinct from those Shows and of vital importance, and a room less than half a hundred feet long would suffice for them. It may be too late for alluding to the matter, but whether that be so or not, it is a question, if facts are faced boldly, whether the most prudent course to adopt would not be to make Chiswick the head quarters of the Society this year for husbanding the resources and formulating plans of reorganisation. There would be no loss of status in that, while the meetings as such need not entirely lapse, and the partial rest gained would be followed by more certain and complete reinvigoration.

It is with the newly constituted Council that the decision rests on the line of action that shall be taken in what is perhaps the greatest crisis in the Society's career. The responsibility is a serious one, and a false step may have momentous consequences. Very grave deliberation is called for, and anything of the nature of impulsive movement should be held in check. A strictly horticultural policy can alone bring sympathy and support. The severance from South Kensington will result in a loss of local Fellows, and new supporters are wanted in their stead. Nothing can concentrate the attention of horticulturists on the Society so well, or nearly so well, as the maintenance of the gardens at Chiswick, and to cut the gardens adrift, of which there is danger, will be to cut off its head. The elements of danger lurk in a question of sentiment. If the produce raised at Chiswick cannot be sold the expenses cannot be

met, and as it is considered derogatory to sell, the gardens must go. Those who argue in that way forget the very nature of the Society and its essential objects. It is not a botanic society, but was established as the patron and exponent of practical horticulture ; and this is now conducted on a commercial basis. If the selling of garden produce were humiliating it would not prevail amongst persons of the most delicate feelings and highest sense of honour.

The Chiswick Garden was established for a distinctly practical purpose—namely, for conducting experiments for acquiring sound information and disseminating it for the use of others. This cannot be done to meet present and future requirements without the subjects in hand are thoroughly tested, and they cannot be so tested except on commercial principles. Nothing can be more honourable than work of the nature indicated with the high object in view, and the more that can be realised in its conduct the more creditable to its conductors. More than ever now is it requisite to determine the profit and the loss of crops under differing circumstances ; and the need will grow with the inevitable changes of the future. Let such work be prosecuted, and not only varieties tested, but the effects of chemical manures, and Chiswick may become a real school, which because of its usefulness will win the respect of the community.

Has not the Royal Agricultural Society its experimental farm, and is not the produce sold ? In what other way could proof be afforded of the usefulness of its work ? And what more honourable engagement than the acquirement of knowledge for the purpose of distributing it for the benefit of the commonweal ? Her Majesty the Queen and the Prince of Wales avowedly act on these principles in respect to farm stock ; how, then, can it be derogatory to any Society to proceed on the same lines ? Common sense rises in rebellion against such sentimental notions, and it is earnestly hoped that common sense will prevail in the conduct of the Royal Horticultural Society and a great and useful future may be in store for it ; but if its resources are devoted to semi-scientific objects, and for the gratification of specialists, and no tangible results can be presented to the world, the Society must degenerate into a nonentity, and it will fall a victim to that pride that goeth before destruction. As it has lived so long, and struggled through so many difficulties, it deserves a better fate ; and it should be, ought to be, and might be, a pioneer in the work of profitable garden culture that it is so desirable to promote in the British Isles.

ANNUAL MEETING.

THE annual meeting of this Society was held on Tuesday afternoon in the East Crush Room of the Royal Albert Hall, Sir Trevor Lawrence, Bart., M.P., presiding, and the following members of the Council were present : Dr. Robert Hogg, William Lee (Secretary), E. G. Loder, G. F. Wilson, together with the retiring members, Major F. Mason, William Haughton, and Colonel Trevor Clarke. About sixty Fellows were also present.

After the reading of the minutes a number of new Fellows were elected.

The Rev. W. WILKS said it was well known to everybody that a certain amount of blame had been cast on the Council for the action they took in resigning in a body and then proposing the re-election of the greater body of themselves. It appeared to him that instead of any blame they ought to receive the most cordial thanks, for by their resignation they enabled the Society to elect a new Council *en bloc* if they thought fit, or to infuse as much new blood into it as they chose ; and by many of them offering themselves for re-election, they showed plainly that there was ample life in the Society to enable it to continue for many years to come. They had, in fact, utterly declined to act like the proverbial rats deserting a sinking ship. He thought therefore that it would only be a graceful act if they re-elected those members of the Council who were willing to continue their services. He therefore moved that "This meeting begs to thank the Council for the opportunity which by their proffered resignations they have given to the Fellows of electing an entirely new Council, but respectfully declines to accept the resignation of the following members—Sir Trevor Lawrence, Dr. Robert Hogg, Professor M. Foster, Mr. W. T. Dyer, Mr. William Lee, Colonel Beddome, Mr. Sydney Courtauld, Mr. E. G. Loder, Baron Henry Schröder, and Mr. George F. Wilson."

Mr. H. G. VEITCH seconded the motion, which was unanimously passed.

The CHAIRMAN then announced that the election of the officers and Council would next be proceeded with, and ballot papers were, in accordance with the usual custom, handed round to those present. Sir Trevor Lawrence remarked that, with regard to the nomination of Baron Schröder for the post of Treasurer, the Council were very anxious that the Baron should act in that capacity, and did their very best to induce him to accept the post. Baron Schröder, however, was unfortunately obliged, out of paramount considerations of health and work, to decline, and he might inform them that he had received a letter from the Baron in which he expressed his extreme regret at being unable to attend the meeting that day, inasmuch as he was confined to his bed with an attack of bronchitis. He also regretted to say that Professor Foster was likewise prevented from being present in consequence of a bad cold. Col. Beddome, who was one of the nominees for the post of Treasurer, and who would have made an excellent officer, had also declined to serve, and the Council had unanimously nominated Mr. Morris for that position. A good many of the Fellows in the Royal Horticultural Society did not, perhaps, know who Mr. Morris was. He might, however, for the information of those who were not acquainted with his career, state that Mr. Morris, after a distinguished course at the University, had been engaged in horticultural matters in the Colonies for many years, and had occupied many important positions in connection with them. He (Sir Trevor) was informed that the gardens under Mr. Morris's control had always been well managed, not only from a horticultural but also from a business point of view, and the Council would be fortunate if they succeeded in obtaining the services of that gentleman. (Hear, hear).

Major LENDY and Mr. WYNNE then formally withdrew their opposition respectively, to the nominations of Mr. Morris and Mr. Dyer as members of the Council.

The CHAIRMAN, who rose amidst cheers, said it was now his duty to make a few remarks with regard to the present position of the Society, and he must say that, in his opinion, the Society occupied a more hopeful position now than it did a year ago. That arose mainly, in his opinion, from the fact that they were now no longer trammelled by a connection with South Kensington. (Cheers.) He had no desire to recall disagreeable memories, and he might here say, with reference to the gentlemen who thought it their duty to send in their resignations as members of the Council—Colonel R. Trevor Clarke, Major F. Mason, and Mr. W. Haughton—that he thought the thanks of the Council and of the Society were due to them for the services they had rendered during many years. They did not altogether agree as to what was the wisest to do for the future of the Society, but these gentlemen loyally accepted the position when they found they were in a minority, and with a view to rendering the future consultations of the Council more satisfactory they withdrew. They took that step, of course, after they ascertained that their views no longer commanded the general acceptation of the Council. Colonel Trevor Clarke was well known in the horticultural world, and, apart from other considerations, his resignation in that respect was a loss to the Society. (Hear, hear.) The absence of the other two gentlemen would also be felt ; and he might especially say with regard to Mr. Haughton, that the Society would have liked to continue his services if possible. (Hear, hear.) He (Sir Trevor Lawrence) had not the least doubt that the vast majority of the members of the Council were now at all events of one opinion ; and that majority were agreed that the connection of this Society with South Kensington had been prejudicial to the interests of the Society. There had, amidst the gloom, been transient gleams of sunshine, but they had not taken advantage of those transient gleams of sunshine in a financial sense to put money by for a rainy day. On the contrary, these glimpses of sunshine had done rather more harm than good, as they had had the effect of leading the Society into a rather extravagant course. If it had not been for the lamented death of the Prince Consort, the circumstances of the Society probably would have been far different. They would have had the enormous advantage to be derived from his prudent and wise advice and great influence, and if he had lived the story of their connection with South Kensington would doubtless have been a totally different one. As they knew, about this time last year negotiations were going on with the Albert Hall Corporation. Those negotiations never came to anything, and he was never sanguine that they would. He must confess that he never believed it was likely that their negotiations with the Royal Commissioners of the 1851 Exhibition would ever lead to a result satisfactory to the Society. Reference was made in the report read at the previous annual general meeting to the desirability of getting a site for the Society on the property of the Royal Commissioners. A site was offered to them by the Royal Commissioners, not in a good position, it was true, though if it had been adequate in size it might, perhaps, have been adopted by the Society. But the offer was encumbered with this perfectly impossible condition, that it was not to confer on the Society any right, either moral or legal, to the use of the gardens and conservatory. They would thus have found themselves hampered with the incubus of a building of considerable costliness, and the use of which would have been annihilated if they had not had at the same time the use of the gardens and conservatory. Then there was an offer to let the gardens to them at a rental of £1000 a year. That in the present financial condition of the Society was impossible. To have paid the rates and taxes as well as to have incurred the cost of the maintenance of the gardens would have been an enormous additional burden, and whatever the financial position of the Society might be now, it would have been infinitely worse if they had entered into any such agreement as that suggested by the Royal Commissioners. Thus it was that the negotiations that had been going on year after year,

and the offers made by the Royal Commissioners, had practically failed, and it had long been obvious that the ceasing of the connection with South Kensington was only a matter of time. The time had now arrived for a complete and definite severance. In thus going away they would leave a great deal behind them. He was sorry to say the Society had spent on the grounds where they were now located £78,557 18s. 4d., or, in round figures, £80,000. On leaving the grounds they would not receive consideration even to the extent of one halfpenny; and whether or not the Society was acting wisely in bringing its connection with South Kensington and the Royal Commissioners to an end, there remained this fact that it left this enormous sum of money behind, and he was afraid he might also say it left some small portion of its credit and renown behind with it. (Hear, hear.) It was their business to look the state of affairs in the face, and see if they could not—by setting the Society on a new basis, and finding it a proper home—re-establish its character and position. They had received very great assistance from horticulturists in all parts of the country, and he believed that when the proposals that to-day would be laid before the Society became known that assistance would be largely increased. As to the charter, they had consulted their solicitors, and they advised them that once possessed of a charter it was exceedingly difficult for a Society to get rid of it, and a costly and troublesome proceeding to get it amended, and consequently that if possible it was desirable to go on with the present charter. No doubt a great deal of the charter was absolutely obsolete, and when they departed from South Kensington would refer to a state of affairs that had entirely ceased to exist. But he thought, in face of the advice they had received, they had better run on with the present charter as long as possible. With regard to the bye-laws, a considerable portion of them were also obsolete. With reference to the Council, he should like to mention that they had placed their resignations in the hands of the Fellows, with the view of leaving the Society at perfect liberty to make whatever selection they thought proper of a new Council. It had been suggested in one quarter that as they had proceeded to re-nominate a certain number of their body, their resignations were scarcely sincere; but a little reflection and study of the bye-laws would show that this was not so. There was not one of them who would not most willingly resign his place to make way for anybody else, if it could be shown to be of the slightest advantage to the Society. (Cheers.) Some comment had been made on the fact that they had on the Council two gentlemen connected with the national establishment at Kew. It was feared that the rest of the Council would not be able to hold their own against them. Now, if the Council could not hold its own against two of its members—whether they came from Kew or anywhere else—they would be unfit for their position. But the fact was that they had acted in the most perfect harmony with them, and the fact of the Council having among them the head of the greatest botanical and horticultural institution in the world was of the greatest advantage. With regard to the outside Committee, the Council had met with the greatest possible assistance from them. Out of the seven gentlemen proposed by that Committee for election to the Council, the Council had adopted four. Two of the gentlemen whose resignations the Fellows had declined to accept would find it necessary, they said, to retire, and would make way for two others of the seven proposed by the outside Committee. The result would be that out of the fifteen new Council eight would be old members and seven would be new. The Council had received many assurances that the persons interested in horticulture had no intention of deserting the Society. (Cheers.) It had unfortunately been in difficulties in regard to financial matters, and it would be absolutely necessary for the Council to be provided with sufficient funds to carry on the work of the Society, as they could not incur liabilities if they saw no prospect of being able to deal with them. But when matters were placed on a new footing he believed the amount of support required, which was not very large, would be accorded. (Cheers.)

Mr. Geo. Deal, Secretary, read the report of the special Committee appointed at a special general meeting held on December 13th. It described the suggestions made to the Council to fill the anticipated vacancies in the Council and the agreement arrived at, and recommended that the two extraordinary vacancies anticipated after the election of this day should be filled by the election of Messrs. T. B. Haywood and J. Woodbridge.

The principal points in the Report of the Special Committee of the Fellows of the Royal Horticultural Society, presented to the Annual Meeting, and read by Mr. G. Deal, were as follows:—

After careful consideration of the requirements of the Society, and after an inspection of numerous premises by means of a Sub-Committee, your Committee submits that the undermentioned premises seem to meet the present requirements of the case better than any other, and therefore strongly recommend that they should be forthwith secured.

Offices.—The Committee is of opinion that the first floor of No. 111, Victoria Street, is well suited for the London head-quarters and offices of the Society, and for the housing of the Lindley Library in case the Trustees consent to its being placed there. [The Trustees of the Library are not absolutely bound by their deed to place the library on the Society's premises, after its removal from South Kensington, though there is little doubt that they would do so.]

The premises occupy a good position, almost midway between the Victoria Stations and St. James's Park Station on the District (Underground) Railway, and within a few minutes' walk of either. The ground floor of the house is occupied by the "Metropolitan Drinking Fountain Association," and the upper floors are let out in sets of chambers. The first floor consists of two rooms and the usual conveniences. The smaller of the rooms is 16 feet 2 inches long by 8 feet 6 inches wide, and could be used as a clerk's room. The larger of the rooms is a spacious and convenient apartment, 42 feet 6 inches long by 22 feet 9 inches wide. It has a coved ceiling and is very lofty, being 18 feet high, so that it is well adapted for the purposes of Library, Reading, and Council Room, and for business purposes generally.

A plan of the premises and a sketch of the larger room have been prepared, which will explain the extent of the accommodation much better than mere words can do. These premises are offered at a rental of £120 per annum, free from rates and taxes.

Arrangements for Shows and Meetings.—Your Committee having in view, at this particular time, only the metropolitan requirements of the Society, further submits that the Drill Hall of the London Scottish Rifle Volunteers is well suited for holding large exhibitions, smaller meetings, and for the assemblage of the several Committees. It is situated in James Street, Victoria Street, within two minutes' walk of St. James's Park Stations on the District (Underground) Railway, close to the Army and Navy Stores, and within two or three minutes' walk of No. 111, Victoria Street, the premises already recommended for the offices of the Society. The Hall is 135 feet long by 72 feet wide, is lofty, has a fairly good light, and is generally suitable for the purposes indicated. It has a back entrance which can be made use of for carrying in and removing exhibits, and a good carriage entrance adapted for the arrival and departure of visitors. There is a room available in the basement for the storage of the necessary tables and tressels. Your Committee has instituted inquiries and opened negotiations with the Committee of the London Scottish Rifle Volunteers, and now begs to recommend that the Society should confirm the offer made by the Committee to pay a rental of £100 per annum, from March 25th next, in order to secure the use of the Hall for twenty meetings during the year; the rent to include the cost of storage room in the basement for the Society's tables and tressels, and, if possible, to secure the use, on show days, of the Luncheon Room and probably of the Committee Room for a few hours in the morning occasionally. Propositions to hold Exhibitions, &c., at Chiswick and in other localities in London and in the Provinces, will form the subjects of future deliberation.

New Bye-Laws and General Policy.—The Committee has under consideration the construction of new bye-laws intended to facilitate the carrying out of as complete a horticultural policy as possible—one in which all aspects and departments shall be considered, to the undue preponderance of none, but to the general advantage of all. A more adequate representation of horticultural representatives and of diverse interests in the Council is aimed at as well as the creation of an enlarged constituency, especially in the provinces, by means of reduced rates of subscription, adequate privileges, and representation on the governing body being secured to the subscribers of whatever grade.

It is hoped that by the institution of such a policy the Society may become the central horticultural Society of the empire, with branches and representatives in every district of the country, and with Committees and sub Committees to meet the wants of specialists and those interested in particular departments.

Secretary and Manager.—The Committee urge the paramount importance of appointing a well-qualified paid Secretary at as early a date as possible, the services of such an officer being, in its opinion, indispensable for the adequate discharge of the work involved in the reorganisation of the Society.

Lastly, as these and other schemes for the future development of the Society must of necessity occupy some considerable time before they can be put into working order, your Committee suggests that it should this day be re-appointed with full powers, and that it should continue to co-operate for the current horticultural year in the same satisfactory spirit as heretofore with the Council in all matters relating to the welfare of the Society.

Signed on behalf of the Committee,
Maxwell T. Masters, *Chairman.*
Geo. Deal, *Secretary.*

February 14th, 1888.

Dr. Masters, the Chairman of the Committee who presented the above report, expressed satisfaction at the harmony and co-operation which had existed between it and the Council, and added that the new policy which was indicated was substantially the same as that initiated by Prof. Forster and Mr. Dyer, and already approved by the Fellows. One great fault of their Society had been that they had looked upon horticulture as the plaything of the rich, or as a mere money-grubbing machine for the few pecuniarily interested in it. But horticulture had far higher aims than this. It had involved in it the interests of the country at large. The agriculture of the future would be to a large extent horticulture—(hear, hear)—and the Society had got to teach agriculturists how to make a living. (Hear, hear). It seemed also to him that the Society had not sufficiently considered the interests of the practical gardeners of the kingdom, many of whom, perhaps, could not afford to pay the subscription, and whom it might be well to admit at a lower subscription—(hear, hear)—and so endeavour to promote their education and welfare, and raise them in the social scale. It might be said this was a very fine scheme, but they did not expect to carry it out all at once. Gradual evolution and not sudden revolution would ultimately land them where they hoped to be. Personally he did not think they would be able to get on long without a new charter, but much might in the meantime be done by altering their bye-laws.

The report of the Committee was received and adopted, and the Committee was re-appointed.

Mr. J. Douglas and Mr. H. Turner having been appointed the scrutineers and a ballot taken, it was reported that the old members of Council already named by the Rev. W. Wilks, and also Mr. D. Morris, Mr. A. H. Smee, Mr. George Paul, Mr. Harry Veitch, and the Rev. W. Wilks himself had been elected by forty-four votes against six. The following being returned as officers :—President, Sir Trevor Lawrence, Bart., M.P. ; Treasurer, David Morris, M.A., F.L.S. ; Secretary, William Lee ; Auditors, John Lee, Wm. Richards, H. Turner.

A resolution empowering the Council to rent the London Scottish Volunteers' Drill Hall at £100 a year, and the Victoria Street Offices at £120 was then passed.

A vote of thanks was passed to Mr. Laing, builder, for assistance rendered by him to the Committee in finding and securing these premises.

A hearty vote of thanks was then passed to Mr. Haughton, Captain Bax, Major Mason, and Colonel Trevor Clarke.

It was next resolved that the following be a new bye-law :—"The President may call a special general meeting of the Society if he consider it necessary, any bye-law to the contrary notwithstanding, subject to not less than a week's notice being given."

Colonel R. TREVOR CLARKE, rising to acknowledge the vote of thanks in which he had been included, said he had joined the Society when he was young ; he had grown old amongst them ; he loved and honoured the Society, and hoped to die in its service. (Cheers.)

The Council's report and balance-sheet for the year were formally adopted, and a vote of thanks to the Chairman terminated the proceedings.

REPORT OF THE COUNCIL FOR THE YEAR 1887.

I.—FINANCE.

THE statement of receipts and payments for the past year and the balance-sheet, together with the auditors' report, will be found below.

It will be seen that the Council have done all in their power to exercise economy in every direction. The labour bill at Chiswick has been reduced to its lowest limits. No money prizes have been offered, and paid advertisements have been suspended as far as practicable. An urgent circular was issued, and all outstanding subscriptions, except about £120, have been collected.

The Council desire to convey the thanks of the Society to the auditors, Messrs. John Lee, W. Richards, and H. Turner, for their continued gratuitous services in auditing the accounts.

ANNUAL REVENUE ACCOUNT FOR THE YEAR ENDING 31ST DECEMBER, 1887

EXPENDITURE.

	Cash paid. £ s. d.	Debts payable. £ s. d.	Totals. £ s. d.
To Establishment Expenses:—			
Salaries	483 17 1	483 17 1	
Wages	69 1 0	69 1 0	
Printing and Stationery	41 6 3	23 0 0	64 6 3
Postage	66 12 2	17 2 0	83 14 2
Gas	13 6 8	4 3 11	17 10 7
Miscellaneous	120 1 2	6 12 10	126 15 0
			845 3 1
„ Special Expenses in Relation to Horticulture:—			
Plant and Seed Distribution	137 7 10	38 11 0	175 18 10
Fruit and Floral Committees	107 6 7	20 8 0	127 14 7
Grants in Aid	110 0 0		110 0 0
Frost Report	5 2 0		5 2 0
Primula Conference Report	0 15 6	57 15 9	58 11 3
Pear do. do.		59 11 9	59 11 9
			536 18 5
„ Chiswick Garden Expenses:—			
Rent, Rates, Taxes, and Insurance	232 14 0	64 13 9	297 7 9
Labour	509 0 3		509 0 3
Implements, Manure, &c.	58 9 0	7 17 7	66 6 7
Coal and Coke	120 15 3	55 11 6	176 7 0
Repairs	17 2 7	36 16 7	53 19 2
Trees, Plants, Seeds, &c.	0 10 0		0 10 0
Superintendent's Salary	150 0 0		150 0 0
Water	16 7 0	2 10 1	18 17 1
Miscellaneous	25 10 0	12 19 9	38 9 9
			1310 17 7
„ Kensington Garden Expenses:—			
Rates, Taxes, &c.	122 14 7		122 14 7
Superintendent's Salary	100 0 0		100 0 0
Labour	290 6 1		293 6 1
Repairs	6 0 4	9 0 0	15 0 4
Coal and Coke	31 4 0	33 3 9	64 7 9
Water	5 9 7	7 15 1	13 4 8
Miscellaneous	2 1 0		2 1 0
			607 14 5
„ Exhibitions:—			
Advertising	28 19 6	6 19 9	35 19 3
Prizes and Medals	55 0 9	12 17 4	67 18 1
Superintendent of Flower Shows	25 0 0		25 0 0
Labour	66 6 0		66 6 0
Schedules	25 0 6		25 0 6
Miscellaneous	7 7 0	6 13 2	14 0 2
			234 4 0
„ Provincial Show.—			
Liverpool	42 12 11		42 12 11
	£3093 6 10	484 3 7	
			£3577 10 5
„ Annual Subscriptions:—			
Balance of Subscriptions for 1 6 Un d Written off			331 16 0
			£3909 6 5

INCOME.

	Cash received. £ s. d.	Debts receivable. £ s. d.	Totals. £ s. d.
By Annual Subscriptions	1989 15 0	119 14 0	2109 9 0
„ Promenade Shows	53 5 0	.....	53 5 0
„ Salaries Account, Amount Guaranteed	.....	175 3 0	175 0 0
„ Garden Produce	522 15 9	32 10 3	555 6 0
„ Packing Charges	34 7 0	.....	34 7 0
„ Miscellaneous Receipts	43 17 7	.....	43 17 7
„ Primula Conference Advertisements	7 0 3	.....	7 0 3
„ Pear „ „	17 11 9	.....	17 11 9
„ Schedules Advertisements	28 1 0	.....	28 1 0
„ Dividends, Davis Bequest and Parry Legacy	61 13 8	.....	61 13 8
„ Victoria Commission	8 14 0	.....	8 14 0
„ Ceylon „	11 18 8	.....	11 18 8
„ Provincial Show, Liverpool	55 5 2	.....	55 5 2
„ Fisheries Exhibition for Chairs	20 0 0	.....	20 0 0
„ Inventions „ „	20 0 0	.....	20 0 0
„ Indian and Colonial „	20 0 0	.....	20 0 0
	£2894 4 10	£327 4 3	£3221 9 1
„ *Balance to General Revenue Account*			687 17 4
			£3909 6 5

We have examined the above Accounts with the Books and Vouchers, and we find the same correct.

JOHN LEE,
W. RICHARDS,
HARRY TURNER, } *Auditors.*

31st January, 1888.

BALANCE SHEET, 31ST DECEMBER, 1887.

DR.

	£ s. d.	£ s. d.
To Sundry Creditors, 1886	350 12 4	
„ „ „ 1887	484 3 7	
	834 15 11	
„ London and County Banking Company, Account overdrawn	317 10 6	
		1152 6 5
„ Donations received		143 7 0
„ General Revenue Account, Balance of that Account		1194 8 5
		£2490 1 10

CR.

	£ s. d.	£ s. d.
By Debtors, viz. :—		
Annual Subscriptions outstanding	119 14 0	
Salaries Account due by Guarantors	175 0 0	
Garden Produce	32 10 3	
New South Wales Commission	29 17 10	
West Indies „	5 5 0	
Victoria „	26 17 2	
New Zealand „	25 4 8	
Ceylon „	5 2 0	
		420 10 11
Investment—3 per cent Consols, £2122 8s. 9d., cost (£2022 8s. 9d. of this sum is held by the Society, subject to the provisions of the will of the late Alfred Davis, Esq.)		1892 11 3
„ Petty Cash in hand		33 12 8
„ London and County Bank, Donation Account		143 7 0
		£2490 1 10

We have examined the above Accounts with the Books and Vouchers, and we find the same correct.

JOHN LEE,
W. RICHARDS,
HARRY TURNER, } *Auditors.*

31st January, 1888.

GENERAL REVENUE ACCOUNT, 31ST DECEMBER, 1887.

Dr:

	£ s. d.
To Annual Revenue Account, Balance for the year 1887	687 17 4
„ Balance carried forward	1194 1 5
	£1882 5 9

Cr.

	£ s. d.
By Balance of Revenue Account brought forward 1st January, 1887	1882 5 9
	£1882 5 9

We have examined the above Accounts with the Books and Vouchers, and we find the same correct.

JOHN LEE,
W. RICHARDS,
HARRY TURNER, } *Auditors.*

31st January, 1888.

II.—ARRANGEMENTS FOR THE FUTURE.

Throughout the year the question of the future of the Society has engaged the earnest attention of the Council.

At the last annual general meeting, held on the 8th of February, 1887, a resolution was passed to the effect "That a Committee of five Fellows, not members of the Council, be appointed to co-operate with the Council in considering the future of the Society's affairs, and to report thereon at their earliest convenience," and at a special meeting of the Council held on the 22nd of February power was given to the Committee to add to their number.

The Committee, whose names will be found in Appendix I, held their first meeting a few days after the annual general meeting, and drew up the five resolutions embodied in their letter to the Council, which, together with the answer of the Council, will be found in Appendix III.

The Committee subsequently conferred with the Council on several occasions as to the future of the Society, but, owing to unexpected difficulties, no definite plan of action could be settled.

When the Royal Commission of the Colonial and Indian Exhibition gave up their tenancy of the grounds at South Kensington the Society was practically without any home in London ; but, pending other arrangements, the Council obtained the sanction of the 1851 Commissioners to use the conservatory for their shows and meetings, and their old offices and room for the Lindley library, on the understanding that the Society should "pay all rates and taxes, and make good all damage caused by their occupation, and should undertake the care of the plants, &c., in the conservatory and adjacent gardens."

In deference to the wishes of some members of the Council and of some of the Fellows who were anxious that the Society should, at all hazards, remain at South Kensington, a memorial to the Queen was drawn up and forwarded to Sir Henry Ponsonby, whose reply on behalf of Her Majesty is given, together with the memorial in Appendix IV.

After the receipt of this reply the Commissioners of 1851 were asked to grant a site on their estate at South Kensington, but the site which they proposed was far too small, had a bad approach, and was encumbered with the stipulation that whatever buildings the Society might erect on the land should not confer any right, either legal or moral, to the occupancy of the conservatory and Gardens. The offer was accordingly rejected as wholly inadequate to the requirements of the Society.

The Commissioners were then asked if they could grant a better site and a lease of the Gardens and conservatory. Their reply was that "as they were negotiating with the Royal Albert Hall Corporation they were not then in a position to make a further offer."

A large number of sites in various parts of London were subsequently inspected, but all which were likely to meet the Society's requirements were found to be too expensive.

A special general meeting of the Society was held on June 28th, when the President reviewed the various sites and proposals which the Council had had under consideration, and stated that the uncertainty which attended the future of the Society was having a prejudicial effect on its interests. At this meeting resolutions were carried to the effect—

"(1.) That this meeting requests the Council to take such steps for the maintenance and housing of the Society as may appear to them best calculated to maintain the character and utility of the Society and the interests of Horticulture committed to its charge.

"(2.) That steps be taken immediately to secure accommodation for the Society at the end of the year, either permanent or temporary, in some central situation or not far from the city."

After further search for accommodation, a building in James Street, Buckingham Palace Road, belonging to the Queen's Westminster Volunteers, was brought to the notice of the Council, and after being inspected by many members of the Council and by the Committee of Fellows, it was deemed suitable to the requirements of the Society. Negotiations were entered into, and there appeared to be every prospect of a satisfactory result, when, on October 11th, the morning of the day on which the Council met with the view of sanctioning the arrangement, an intimation was received that the officers of the Queen's Westminster Volunteers had determined not to let any portion of their building.

At a meeting held on the 8th of November, the Council discussed an informal offer from the 1851 Commissioners to let the gardens and conservatory to the Society at a guaranteed rental of £1000. They felt that, on financial grounds, it was impossible for them to accept the offer, as the cost of maintenance, with rates, taxes, &c., would amount to at least another £1000, making an expenditure of £2000 a year for South Kensington alone, leaving office charges and the cost of the Chiswick Gardens unprovided for. It was further decided that no advantage could accrue to the Society from the continuance of negotiations which, as experience showed, could end only in delay and disappointment.

The Council therefore decided to issue forthwith an appeal on behalf of the Society, to the horticultural public of the United Kingdom, which will be found in Appendix V. This appeal fully expresses the views of a large majority of the Council, after a careful review of the future prospects of the Society. In consequence of this decision of the Council, Colonel R. Trevor Clarke and Major F. Mason resigned their seats, and Mr. William Haughton gave notice that he should resign at the end of the year.

A list of donations and subscriptions received up to January 31st, 1888, in response to the appeal, will be found in Appendix VI.

On the 13th December a special general meeting of the Fellows was held, when the policy to be pursued in the future was discussed at length. A very large majority of those assembled concurred in the decision of the Council not to enter into further negotiations with the Royal Commissioners of the Exhibition of 1851, which could not result in any satisfactory arrangement, but to concentrate the efforts of the Society on its Chiswick Gardens and on the advancement of horticulture; to adopt, in short, a purely horticultural policy.

At this meeting, the following resolution, proposed by Dr. Masters, and seconded by Mr. A. H. Pearson, was carried—viz.,

"That this meeting approves of the proposals in paragraphs 6 and 8 of the circular of the Council, and authorises them to take steps to carry them out.

"This meeting requests the Council to consider the desirability of obtaining a supplemental charter, and meanwhile requests them to vary the bye-laws in such a way as will ensure the Fellows having full control over the election of the Officers and Council at the annual general meeting.

This meeting proposes the nomination of the following gentlemen, to form a Committee to carry out the above resolutions."

III.—SHOWS, TRIALS, &c.

In addition to the ordinary fortnightly meetings, the following Shows were held under the auspices of the Society:—

April 26th.—National Auricula and Primula Society's Show.
July 5th.—National Rose Society's Show.
July 26th.—National Carnation and Picotee Society's Show.
Aug. 23rd.—National Co-operative Flower Show.

It had been arranged to hold a Chrysanthemum Show and Conference on the 8th and 9th of November, but this was abandoned, as the days fixed clashed with the Show of the National Chrysanthemum Society.

Arrangements were made, through the courtesy of Mr. Thiselton Dyer, for holding some Narcissus trials at the Royal Gardens, Kew, in consequence of the Narcissus Committee having requested that the trials might be carried out there instead of at Chiswick, on account of the greater facilities existing at Kew for noting the results.

IV.—DISTRIBUTION OF PLANTS AND SEEDS.

In the last annual report it was stated that it had been decided to make special arrangements for the distribution of such plants and seeds of a rare and valuable character, as might be from time to time presented to the Society for that purpose.

Periodical lists of the plants and seeds available for distribution (in addition to the ordinary plants and seeds grown at Chiswick) have accordingly been prepared when a sufficient quantity had been collected: and notices have been inserted in the gardening papers, informing Fellows that these lists could be obtained on application to the Secretary.

V.—AWARDS.

The Scientific, Fruit, and Floral Committees have carried on their labours at South Kensington as usual during the year, and to them the thanks of the Society are due. A great variety of interesting new plants and flowers have been submitted for adjudication. The number of first-class certificates awarded has been 191.

Thanks are due to Mr. H. M. Pollett for printing free of charge and presenting to the Society 500 copies of the awards of the Fruit and Floral Committees from February 12th, 1884, to May 24th, 1887.

The Society in the past year gave thirty-five bronze Banksian medals to provincial societies and flower shows. That these medals are highly esteemed is evidenced by the letters received, which prove that much emulation is caused among the exhibitors by the desire to obtain them. This healthy competition, the Council feel, cannot fail to raise the standard of provincial horticulture.

The thanks of the exhibitors at the Society's Shows are due to Messrs. Sutton & Sons, Messrs. Carter & Co., Mr. H. Deverill, Messrs. Webb and Sons, Messrs. Wood & Son, Mr. Roupell, and Mr. C. Fidler for their donations of special prizes.

VI.—PUBLICATIONS.

The Society has published during the year Vol. VIII. of the Journal entitled "The Frost Report," on the effects of the severe frosts during the winters of 1879–80, 1880-81, edited by the Rev. George Henslow, M.A., the Hon. Sec. to the Scientific Committee; and Vol. IX., entitled "Pears," being the report of the Committee of the National Pear Conference held in the Society's Gardens at Chiswick, October, 1885, prepared by Mr. A. F. Barron, the Superintendent of the Society's Gardens, and Secretary to the Fruit and Floral Committees. Copies of these publications may still be had by the Fellows, free, on application to the Secretary.

VII.—IMPERIAL INSTITUTE.

In June the attention of the Organising Committee of the Imperial Institute was called by the Council to the fact that apparently no provisions had been made for the representation of horticulture in the scheme of the Institute as set forth in the *Times* of May 30th, 1887. The only reply received was to the effect that the letter would be laid before the Committee at their next meeting.

VIII.—COUNCIL AND FELLOWS.

At a meeting of the Council on March 22nd, Mr. A. B. Mitford, C.B., vacated his seat in consequence of other engagements, and Mr. George Maw was elected to fill the vacancy.

Reference has already been made to the resignations of Colonel Clarke, Major Mason, and Mr. Haughton.

During the year thirty-three Life Fellows and thirty-one Annual Fellows died, 195 Fellows retired from the Society, and twenty-four new Fellows were elected, showing a decrease of 235 Fellows since the last Annual Meeting.

IX.—ADDRESS TO THE QUEEN.

A loyal and dutiful Address was presented to Her Most Gracious Majesty the Queen, Patron of the Society, on the occasion of Her Majesty completing the fiftieth year of her reign. A copy of this Address will be found in Appendix VIII.

January 10th, 1888.

[The appendices referred to have been published in our columns except that referring to the list of donations and subscriptions, which

now appears. The report of the Council to the Fellows and the appeal to horticulturists appeared in this Journal on page 513, last volume.]

LIST OF DONATIONS AND SUBSCRIPTIONS UP TO JANUARY 31st, 1888.

	Donations. £ s. d.	Subscriptions. £ s. d.
Adams, Chas. F.		2 2 0
Ames-Lyde, Mrs.	5 0 0	4 4 0
Backhouse & Son	10 0 0	1 1 0
Balderson, Henry		2 2 0
Ballard, Mrs.		2 2 0
Barrand, Mrs.		2 2 0
Bartlett, John E.	10 10 0	2 2 0
Bassano, Madame		2 2 0
Beale, Lionel S., M.D.		2 2 0
Bradshaw, R.		2 2 0
Brickwell, Capt. S. J., R.N.	2 2 0	2 2 0
Bunyard, George	5 5 0	2 2 0
Browne, Mrs.	2 0 0	1 1 0
Chaston, H. R.		2 2 0
Cheal & Sons, J.	5 5 0	
Cheal, Joseph		2 2 0
Cheal, Alex.		2 2 0
Colebrook, John	5 5 0	2 2 0
Cotton, Rt. Hon. Sir H.	2 2 0	2 2 0
Courtauld, S.	50 0 0	2 2 0
Consins, C. W.		2 2 0
Cundy, Chas.		2 2 0
Daniel, Miss E.	5 0 0	2 2 0
Dawnay, Hon. Payan	5 0 0	2 2 0
Dncie, Earl of, F.R.S.	50 0 0	4 4 0
Duff, Geo S.		2 2 0
Dyer, W. T. Thlselton, C.M.G.	5 5 0	2 2 0
Easten, Arthur H.	1 1 0	2 2 0
Ebury, Lord		4 4 0
Edwards, Edward		2 2 0
Evre, Thomas		2 2 0
Finn, Alex.		2 2 0
Ford, Sidney		2 2 0
Foster, Professor M., F.R.S.	5 0 0	2 2 0
Gledstanes, Francis G.	1 1 0	2 2 0
Gordon, John	2 2 0	2 2 0
Grimshaw, J. Stanfield	3 3 0	2 2 0
Hanbury, Edmnnd S.		2 2 0
Harrison, Capt. J. N.	2 2 0	
Hayes, John	1 1 0	2 2 0
Haywood, T. B.	10 10 0	2 2 0
Helder, Augustus		2 2 0
Hodgson, T. T.		2 2 0
Hogg, Dr. (*Journal of Horticulture*)	50 0 0	2 2 0
I'Aanson, Dr. T. F.		2 2 0
Jupp, Mrs. Geo. H.		2 2 0
Jupp, Geo. H.		2 2 0
Knighton, F.		2 2 0
Lancaster, Arthnr H.		2 2 0
Lawrence, Sir Trevor, Bart., M.P.	200 0 0	2 2 0
Lawrence, Lady		2 2 0
Lee, John	10 10 0	
Lee, Wm. (in instalments)	100 0 0	2 2 0
Lee, Mrs. S. A.	50 0 0	2 2 0
Leonard, H. S.		2 2 0
Lewis, Arthur J.		2 2 0
Lile, John H.		2 2 0
Loder, E. G.	100 0 0	2 2 0
Low & Co., Hugh	25 0 0	
Lye, James		1 1 0
Mackrell, John		2 2 0
Masters, Maxwell T., M.D., F.R.S.	2 2 0	2 2 0
Matthews, John		2 2 0
Mawley, Edward	1 1 0	2 2 0
Maxwell, Wellwood H.		2 2 0
Ogle, Bertram S.	2 2 0	2 2 0
Onley, O. S.	1 1 0	2 2 0
Ord, Mrs. Blackett		2 2 0
Parker, Frank R.		2 2 0
Payne, Wm.	10 0 0	2 2 0
Pearse, Maj.-Genl. J. L.		2 2 0
Pearson, Henry J.	20 0 0	2 2 0
Phillimore, Chas. B.	10 0 0	5 5 0
Pollett, H. M.	10 10 0	2 2 0
Protheroe and Morris	26 5 0	4 4 0
Rothschild, Baron Ferd. de	50 0 0	2 2 0
Rotton, J. F.		2 2 0
Ronpell, W.		4 4 0
Schröder, Baron Hy.	200 0 0	4 4 0
Smith, Charles H.		2 2 0
Smith, R. A. H., Bickford		2 2 0
Stevens, Geo.	1 1 0	2 2 0
Streatfield, Mrs. F		2 2 0
Stuart, Col. Wm.	2 2 0	
Sutton, W. L.	2 2 0	2 2 0
Swinburne, Miss	15 0 0	2 2 0
Terry, Capt. Courtenay F.		2 2 0
Terry, Mrs. Courtenay F.		2 2 0
Threlfall, Will.	10 0 0	2 2 0
Tidswell, R. H.		2 2 0
Townsend, H.		2 2 0
Vaizey, J. R.		2 2 0
Vaughan, H.	10 0 0	
Veitch, Harry J. (first donation)	50 0 0	
Warren, John		2 2 0
Webb, E. A.		1 1 0
Wells, H. C.		2 2 0
Wheeler, A. C.		2 2 0
Wilks, Rev. W.	10 10 0	2 2 0
Wilson, Geo F., F.R.S.	50 0 0	
Wood & Son, W.		2 2 0
Worsley, P. J.	2 2 0	2 2 0
	£1210 2 0	£208 19 0

COMMITTEE MEETINGS.

Rarely have so many varied attractions been provided in the conservatory at the February meeting, and it seemed that the Fellows and friends of the Society were desirous of showing an undiminished interest in these meetings now they are drawing to a close at South Kensington. The Apples alone constituted an exhibition for this season of the year, Orchids, Primulas, Daffodils, and miscellaneous hardy flowers, with the brilliant Chelsea Rhododendrons, forming the chief floral attractions. There was a large attendance of the members of all the Committees.

Fruit Committee.—T. Francis Rivers, Esq., in the chair, and Messrs. Wm. Paul, J. Wright, Harrison Weir, J. Smith, T. J. Saltmarsh, Sidney Ford, J. Woodbridge, C. Ross, J. Roberts, J. Cheal, C. Howe, G. W. Cummins, W. Denning, W. Marshall, H. J. Veitch, John Lee, P. Crowley, and J. Willard. The display of Apples was very extensive, upwards of 400 dishes being staged, and though the hot summer had not been conducive to large size, it had apparently been the reverse of inimical to the keeping properties of the fruit. Messrs. G. Bunyard & Sons, The Old Nurseries, Maidstone, placed on the table a dish of the Royal Jubilee Apple, which had been before the Committee on a previous occasion. It is a fine-looking Apple of the character of Golden Noble and Waltham Abbey Seedling, and presumably because it was not considered superior to those good varieties no award was made. Mr. James Davis, The Gardens, Bodenham, Leominster, sent a dish of a seedling Apple of good size, but as only three fruits were submitted the Committee could not take cognizance of the variety. Mr. S. Ford, Leonardslee, sent a small dessert Apple resembling Golden Drop, which was passed. Mr. Blair sent from Trentham Gardens handsome specimens of Calville Blanche Apples grown in pots and gathered on February 10th. A cultural commendation was unanimously awarded. Four dishes of seedling Apples were placed on the table from Mr. Sidney Ford, Leonardslee, but as the best in appearance was "gone" in the centre and the others not of high quality they were passed. Mr. J. Smith, Mentmore Gardens, sent specimens of Cockle's Pippin and Blenheim Pippin grown on the Crab and Paradise stocks—the trees of the former sixteen years old, of the latter four years. The fruit from the latter were twice the size of the others. A vote of thanks was awarded. The Apple that was sent by Mr. A. Dean to the last meeting was determined to be Grange's Pearmain, a heavy well-coloured Apple. Mr. Dean sent dishes of Keddleston Pippin and Sam Young; also two dishes of Onions Tennis Ball and Danesfield (vote of thanks). Mr. Burnett, Deepdene sent bunches of Lady Downe's Grapes from the West's St. Peter's and Black Hamburgh stocks, the former being thinner in skin and sweeter than the latter, which was, however, good, and superior in appearance and would keep better. Mrs. Pince on the Royal Muscadine stock was good in size and quality, but not more so than on its own roots. A cordial vote of thanks was awarded for the interesting contribution.

The collections of fruit reached nearly the whole length of the conservatory, and the display was a remarkable one for the time of year. Mr. S. Ford staged twenty-five dishes of Apples and four of Pears, the former wonderfully well coloured, but not as a rule large, and all admirably kept. Three bunches of Lady Downe's Grapes were sent that had been cut twelve weeks, and were in good condition. A similar collection as regards numbers was sent by Mr. C. Ross, Welford Park, Newbury, but the fruits larger in size, and handsome. Mr. G. W. Cummins, gardener to A. H. Smee, Esq., The Grange, Wallington, sent seventy-four dishes of Apples, the majority small, but the whole well kept, though the low-lying position of the garden is not favourable to high colouring. Messrs. J. Cheal & Sons, Crawley, sent the same number of dishes—a good representative collection of large and small varieties, very well coloured. Messrs. G. Bunyard & Co. staged upwards of 100 dishes, most of them very fine, and the fruit richly coloured. Messrs. T. Rivers and Son contributed nearly 100 dishes of Apples, including some varieties as yet but little known, and the whole wonderfully well kept. Messrs. Rivers' collection of Oranges, Lemons, and Shaddocks attracted much attention from the size and clearly coloured fruit, the Maltese Blood Oranges cut being delicious in quality.

Silver medals were granted to Messrs. Rivers and Bunyard, and bronze medals to the other exhibitors referred to, the honours in each case being well merited.

Floral Committee.—Present: G. F. Wilson, Esq., in the chair, and Messrs. H. Bennett, J. Fraser, W. Bates, E. Hill, A. J. Lendy, T. Baines, J. Walker, W. Goldring, G. Paul, G. Duffield, C. T. Druery, R. Dean, W. Holmes, B. Wynne, J. Dominy, C. Pilcher, H. M. Pollett, and J. O'Brien.

The amateurs' exhibits were principally plants and flowers of Orchids, amongst them being a choice group from Sir Trevor Lawrence, Bart., M.P., Burford Lodge, Dorking (Orchid grower, Mr. Bickerstaffe), comprising the following, in addition to the two for which certificates were awarded—namely, Odontoglossum crispum pardalinum, and Dendrobium chrysodiscus; Pleurothallis Roezli, a remarkably distinct species, quite the giant of its genus in the size of the flowers, which are claret red and fleshy; Odontoglossum crispum punctatissimum, a peculiar variety with neat flowers, white dotted with brown and purple; Masdevallia gargantua, green and dull red large flowers, and unpleasant odour; M. leontoglossa, another large flowered species, mottled like some of the Stapelias, and possessing a peculiar odour which has been compared to that of an old wine cask; Odontoglossum maculatum, with three racemes of four and six flowers each, a very fine variety; Cattleya Percivaliana, a beautiful variety with seven highly coloured flowers; the bright orange Lælia harpophylla; Dendrobium amethystoglossum, with narrow pointed white sepals and petals, the lip scoop-like and purple; and the bright Masdevallia Fraseri. Baron Schröder, The Dell, Egham (gardener, Mr. Ballantine) sent a wonderfully fine panicle of the brown spotted Odontoglossum crispum Stevensi, which had over fifty large flowers, and the cultural commendation awarded was well deserved. From the same garden came several choice varieties of Lælia anceps, including the beautiful Dawsoni; and Odontoglossum crispum xanthotis, with large white flowers, the lip yellow in the centre and a few yellow spots on the petals (vote of thanks). A. H. Smee, Esq., The Grange, Wallington, Surrey (gardener,

Mr. G. W. Cummins) showed a small collection of Orchids, comprising two forms of Odontoglossum Erstedti majus, one having all the flowers singly, the other in pairs. The curious yellow flowered European terrestrial Orchid, Ophrys lutea, was represented, together with Dendrochilum glumaceum, the diminutive Masdevallia culex, Sophronitis violacea, the charming little Angræcum hyaloides, and others. C. M. Major, Esq., Cromwell House, Croydon (gardener, Mr. W. Wright) sent a raceme of Dendrobium Hilli, together with a photograph of the plant noted in this Journal last week. From the Royal Gardens, Kew, plants were sent of Lilium Thomsonianum, the old Bletia verecunda, Cœlogyne lentiginosa, a diminutive Orchid, Holothrix (Tryphia) secunda, a flower head of the handsome Brownea grandiceps, and the peculiar dark purplish flowered Corydalis Ledebouriana. G. F. Wilson, Esq., F.R.S., Weybridge, exhibited dried specimens of a Japanese Grass, which was decided to be Eulalia japonica, very graceful for vases.

The nurserymen's contributions were of a more varied character and added materially to the extent of the Show. Messrs. J. Veitch & Sons, Chelsea, sent from their beautiful stores flowers and plants of the useful greenhouse Rhododendrons, and two novelties were certificated. Noticeable amongst other more attractive forms was R. multicolor, which has small creamy white bell-shaped flowers, quite distinct from the other in shape, and it is being employed in the production of a different type with more shallow and open rather than long and tubular corollas after the jasminiflorum character. With them was the curious relative of the Fritillarias, Korolkowia discolor, which has glaucous Tulip-like leaves and greenish flowers. Several hybrid Dendrobiums were shown, including the fragrant delicately tinted D. euosmum from D. endocharis and D. nobile, also D. euosmum leucopterum from the same parents, but in which the sepals and petals are pure white, the lip having a crimson centre (vote of thanks). D. splendidissimum (from D. aureum and D. nobile) was represented by a small plant, and three distinct forms of Odontoglossum triumphans were included in the group. Messrs. Sander and Co., St. Albans, exhibited the handsome Lycaste Skinneri Imperator (certificated) and two plants of L. Skinneri alba, with wonderfully pure massive flowers. A variety of Odontoglossum maculatum named aneeps was noteworthy for the size and deep colouring of the flowers.

A silver Banksian medal was awarded to Mr. J. James, Farnham Royal, Slough, for a group of Cinerarias, comprising some grand varieties both in the size, shape, and colours of the blooms. A collection of Primulas was included with these. A silver Banksian medal was also awarded to Mr. T. S. Ware, Tottenham, for a beautiful collection of the earlier Daffodils, comprising many choice varieties in the different sections, to which we shall have occasion to refer in another issue. Messrs. Barr & Son, King Street, Covent Garden, were awarded a bronze medal for a similar collection, but not quite so extensive. Messrs. Paul & Son, Cheshunt, had a group of hardy flowers; and Messrs. Cannell & Sons, Swanley, some excellent Primulas, Swanley Giant, White Perfection, and Braid's Seedling (certificated) being the principal varieties. Plants of Cineraria crnenta and the improved form were also sent.

Mr. Ross, Pendell Court Gardens, Bletchingley, showed specimens of Dombeya (Astrapæa) Wallichi, which has cordate leaves over a foot in diameter, and dense bunch-like clusters of salmon-red flowers, the useful winter flowering Franciseas, and the graceful pale yellow Acacia verticillata.

CERTIFICATED PLANTS.—*Rhododendron Ruby* (J. Veitch & Sons).—One of the jasminiflorum-javanicum hybrids, with neat flowers of moderate size and rather more bell-shaped than most of the others, but remarkable for its rich dark shining scarlet colour, quite unique even amongst the fine shades already obtained.

Rhododendron Imogen (J. Veitch & Sons).—A cross between R. Teysmanni and R. Taylori, one of the earlier productions in this section, and still a valued variety. The one certificated on this occasion had unusually large flowers, of excellent form, the lobes of the corolla broad and rounded, the colour a clear delicate creamy white, contrasting admirably with the brighter tinted forms.

Ardisia mammillata (J. Veitch & Sons).—A stove plant with elliptical leaves 4 or 5 inches long by 2 or 3 inches broad, the bright green surface covered with small rounded projections and dense whitish hairs. The fruits are small, globular, and bright red, and are produced in clusters in the axils of the leaves.

Dendrobium nobile var. Cooksoni (Sir T. Lawrence, Bart., M.P., and H. M. Pollett, Esq.).—An interesting Orchid of the D. nobile type, the sepals pale, tinted with purple at the tips, the petals broad and somewhat resembling the lip in appearance, the lower half of each being a rich purplish crimson shade, the tips nearly white, the lip is of good shape with a central blotch of similar colour to that in the petals.

Odontoglossum crispum pardalinum (Sir T. Lawrence, Bart., M.P.).—The chief characteristics of this variety are found in the bold spots and bars upon the sepals and petals, as the flower itself is of moderate size and the divisions are narrow compared with other recognised good varieties of O. crispum. The markings are of a reddish brown shade, which are brought into strong relief on a pure white ground.

Dendrobium chrysodiscus (Sir T. Lawrence, Bart., M.P.).—A hybrid raised in the Burford Lodge collection some time ago between D. Findlcyanum and D. Ainsworthi. The Ainsworthi parentage predominates in the characters, the lip being much like that in shape but very different in colouring. The greater portion is white, with a dense bronzy red and yellowish blotch at the base. The sepals and petals are blush tinted, the whole appearance of the flower being delicate.

Lycaste Skinneri Imperator (F. Sander & Co.).—A handsome variety with flowers of good size, 5 and 6 inches from tip to tip of the sepals, which are of a light blush tint; the petals broad, of an intensely deep velvety crimson shade on the inner surface, which is not so noticeable before they are fully expanded. The lip is also large, rosy crimson, mottled with white.

Iris Histrio (Paul & Son, Cheshunt).—A charming little early flowering Iris, that in the beauty of the marking on the falls is equal to some of the choicest Orchids. The general colour is purplish blue, but the falls are of a brighter shade, mottled with yellow and white. The flowers are also very fragrant and being of dwarf habit it is well adapted for culture in pots.

Primula sinensis Braid's Seedling (H. Cannell & Sons). — This Primula also has the name auriculæflora, which is not a very inappropriate one. The flowers are of great size and excellent form, deep crimson, with a ring of a darker, almost a bronzy, shade round the eye, which gives it a very distinctive appearance.

Tree Carnation Phyllis (C. Turner).—A strong and free flowering variety with well-formed flowers, white, streaked with bright red round the margin, and very fragrant. A useful variety for winter flowering and cutting purposes.

Pteris cretica nobilis (H. B. May, Edmonton).—Crested Ferns are now so numerous that novelties of real merit are rarely added; the one here noted seems to differ chiefly from other forms of P. cretica in the fronds being erect, and the cresting is dense, not so finely cut as occasionally seen. The shade of green is also a peculiarly fresh and pleasing one.

Notes & Gleanings

EVENTS OF THE WEEK.—Beyond the usual auction sales at Covent Garden and Cheapside there are few horticultural events down for the current week. The Royal and the Linnean Societies hold meetings on Thursday at 4.30 P.M. and 8 P.M. respectively. The chief subject before the latter Society will be a paper by Mr. H. N. Ridley on "Self-fertilisation and Cleiostogamy in Orchids."

—— ROYAL HORTICULTURAL SOCIETY.—At the annual general meeting of the Society, held Feb. 14th, at South Kensington, Sir Trevor Lawrence, Bart, M.P., in the chair, the following candidates were duly elected Fellows of the Society:—J. E. Bonny, Esq., George A. Candler, Esq., James Gibson Dees, Esq., Rt. Hon. Polydore De Keyser, Alfred Eastly, Esq., Edward Ellis, Esq., Walter Furze, Esq., John Philipps Charles Graves, Esq., Mrs. John P. C. Graves, Augustus Elder, Esq., Fredk. J. S. Horsman, Esq., R. W. Ker, Esq., William P. Norbury, Esq., Col. C. H. Page, Mr. John Peed, John Raddenberry, Esq., Mrs. Courtenay F. Terry, John Woodbridge.

—— THE WEATHER.—A correspondent writes:—The weather in Perthshire was mild but dull for the first three days of this week, thereafter grew colder. Some snow has fallen. On the nights of the 10th, 11th, and 12th, respectively, 10°, 14°, and 7° of frost occurred, with bright sunshiny days." In London slight frosts have prevailed, and about an inch of snow fell on Monday night last.

—— VEITCH MEMORIAL PRIZES FOR 1888.—We learn that the Trustees have made the following grants of medals and prizes for the present year:—Shropshire Horticultural Society, one medal, with £5 in money for a collection of vegetables; Glasgow and West of Scotland, one medal with £5 for Roses, and one medal with £5 for Grapes; Crystal Palace, one medal with £5 for a collection of fruit; Hull and East Riding Chrysanthemum Society, one medal with £5; Bath Floral, one medal with £5.

—— NATIONAL AURICULA AND PRIMULA SOCIETY (Southern Section), NATIONAL CARNATION AND PICOTEE SOCIETY (Southern Section).—A Committee meeting of the above Societies was held at the rooms of the Horticultural Club, on Tuesday February 7th. It was decided to hold both Exhibitions under the auspices of the Royal Horticultural Society. The Auricula and Primula Exhibition on Tuesday 24th April; the Carnation and Picotee on Tuesday July 24th. The schedules were revised and ordered to be printed.

—— ON Monday last, the 13th inst., at 7 P.M., the NATIONAL CHRYSANTHEMUM SOCIETY held a meeting at Anderton's Hotel, Fleet Street, to receive the reports of the Sub-Committees appointed to consider the desirability of holding a provincial Show, and their production

of a new official catalogue. Owing to the great demands on our space this week we must defer the publication of these interesting reports until next issue; but it may be said that both were unanimously adopted, and it was resolved that the cordial invitation of the Sheffield and West Riding Chrysanthemum Society to hold the first provincial Show in that town be accepted for the present year. The election of new members, the Floral and Schedule Committees, with some alterations in the rules, also occupied the attention of the meeting.

—— The Gardeners' Orphan Fund.—Mr. A. F. Barron writes —"I should feel obliged if you would kindly notice in your next issue for the information of the Hon. Local Secretaries who may be pleased to attend, that the meetings of the Executive Committees have been fixed to be held on the last Fridays in each month (excepting March 30th, which, being Good Friday, the meeting will be on the 23rd), at the "Caledonian Hotel," Adelphi, six o'clock P.M. Nomination forms for the first election of six children to the benefits of the fund on July 13th, are now ready, and may be obtained on application to me."

—— The Victoria Lily of the Valley.—All who have seen this fine variety as it has been exhibited by Messrs. Hawkins and Bennett, or growing in their grounds at Twickenham, will admit its great merit—its vigorous growth and strong spikes of fine bulbs. It is not often that "market men," when they have superior stocks of whatever they may grow to pass from their hands very readily, but as will have been seen this distinct variety of Lily of the Valley is now being distributed. We have had examples similar to it from a gardener in the north, but they may not be identical, and at any rate the Victoria is a clear advance on the typical species.

—— On Sunday last, the 12th inst., a widely known pteridologist and writer, Mr. John Smith, formerly Curator of the Royal Gardens, Kew, died suddenly at his residence in Kew, aged ninety years. Mr. Smith retired from official duties in connection with the Royal Gardens on May 16th, 1864, having then been employed there in several capacities for forty-four years, but for the greater portion as Curator. He applied himself strongly to increasing the collections of plants, which advanced considerably under his care, especially the Ferns, which he made a special study, and several works, including the "Historia Filicum," were published by him dealing with these plants. In his time, too, the Museums of Economic Botany were established and were placed under the charge of his son, Mr. Alexander Smith. Partly from the materials accumulated by the latter, Mr. John Smith produced after his son's death the work "Domestic Botany," which has recently been re-issued as a "Dictionary of Economic Plants." Failing sight was the cause of Mr. Smith's resignation, but his long service obtained him a substantial pension, and since his retirement he has, with the assistance of an amanuensis, produced several works, notably one issued a short time since for private circulation, giving the history of the Kew collections during his period of office.

—— We are informed that the highest award and only prize medal given for Agricultural Grasses at the recent Newcastle Exhibition has been received by Messrs. Sutton and Sons of Reading.

—— Chiswick Gardeners' Mutual Improvement Association.—On February 29th, Mr. Sidney Summers, foreman in the R.H.S. Gardens, Chiswick, will read a paper on "Fruit Culture for Profit," and on March 7th, Mr. F. T. Daniel will read one on "Some American Fruits and Vegetables." As Mr. Daniel has travelled in the United States a very interesting paper may be expected.

—— Mr. William Bryant informs us that "The second Exhibition of the Rugby Chrysanthemum Society is fixed for November 21st and 22nd next, and instead of being confined to a limited radius for exhibitors, most of the classes are thrown open, with a special prize for cut blooms."

—— The Weather in Notts.—The following summary of meteorological observations at Hodsock Priory, Worksop, Notts, for January, 1883, has been sent to us by Mr. Joseph Mallender:—Mean temperature of month, 37·0°. Maximum on the 9th, 59·4°; minimum on the 30th, 19·8°. Maximum in the sun on the 9th, 89·6°; minimum on the grass on the 30th, 18·6°. Mean temperature of the air at 9 A.M., 36·4°; that of the soil at 1 foot deep, 37·0°. Number of nights below 32°, in shade, eighteen; on grass, nineteen. Total duration of sunshine in month, thirty-six hours, or 11 per cent. of possible duration; sixteen sunless days. Total rainfall, 0·77 inch. Maximum fall in twenty-four hours on 31st, 0·34 inch. Rain fell on fifteen days. Average velocity of wind ten miles per hour. Velocity exceeded 400 miles on three days, and fell short of 100 miles on five days. Approximate averages for January:—Mean temperature 37·5°; rainfall, 1·71 inch; sunshine, thirty-five hours (seven years). A dry month of about average temperature and sunshine.

—— Mr. R. Owen, Maidenhead, sends us flowers of his Primula sinensis varieties, remarkable alike for their size, form, and colours. One grand white variety has flowers 2¼ inches in diameter of great substance, some also are beautifully fimbriated. The colours range from pure white to blush rose, mauve, deep red, crimson, carmine, and purple, some also being streaked and spotted. The strain is undoubtedly excellent.

—— The annual meeting of the members of the United Horticultural Provident and Benefit Society was held on Monday evening last. We have only space at present to say that the Society is in a flourishing state, and its character was brought out by the payment of £49 10s. 6½d. to the widow of the late Mr. W. Heale, being the accumulation of his deposits, or his share of the moneys that had not been disbursed in sick payments. Mr. Richard Dean presided over the meeting of this excellent Institution.

—— A correspondent informs us that Mr. William Jennings, for many years foreman of the herbaceous plant collection at the Pine Apple Nursery, Edgware Road, died on the 6th inst., at Edgbaston, Birmingham, at the age of sixty-five. Mr. Jennings was well known in the metropolis, and possessed a wide knowledge of hardy plants.

ARTIFICIAL MANURES FOR POT PLANTS.

I have often thought that the value of artificial manures for applying to plants in pots is not sufficiently appreciated by gardeners generally, considering the highly satisfactory results that can be obtained by the judicious use of the various kinds now in the market, and the clean and easy manner in which they can be applied. Liquid manure made from cow or sheep's dung, or that obtained from the drainings of stables, is also excellent; but it is not always an easy matter to have a regular supply, and in conservatories and plant houses its use is often objectionable. I do not, however, wish it to be understood that I write disparagingly of the value of liquid manure, but I simply wish by comparison to point out the advantages of artificial manures, some of which are as follows:—They are cleaner in their method of application, as nearly all are used by sprinkling a small quantity over the surface soil before watering. They are also more convenient to use, because the plants that require a little assistance when they have become root-bound can have the necessary quantity given to each pot, and the watering be carried on without interruption that takes place when a mixed collection has to be watered. When using liquid manure it is then necessary to go over the plants twice, first to water those that require stimulating, and the second time to water those that should have clear water. The action of artificial manures is also very quick on all kinds of vegetation, bringing sickly looking plants into health again and starting stunted ones into vigorous growth. We have found that equal quantities of Peruvian guano and Clay's fertiliser mixed together (and used at the rate of a teaspoonful to a 10-inch pot) make an excellent stimulant for Palms, strong growing Ferns, Richardias, Azaleas, Fuchsias, Begonias, and Primulas, and in fact nearly all plants. Its effect on those named is quite magical by imparting to their fronds or leaves that deep glossy green colour which is a sure indication of health and luxuriance, and if used at regular intervals it will keep them in good health as long as other conditions are favourable.

A mistake often made in feeding plants is to give them one or two applications and then leave them till they get into a weak and exhausted condition for want of continued nourishment. Soft-wooded plants, when once they have become established in their pots, should be continually fed till their flowers are about half expanded, a sprinkling of artificial manure about once a fortnight and liquid manure twice a week. Palms, Azaleas, and Camellias should be encouraged to make free growth by the application of liquid at each watering during the growing season, and at other times when there is little or no growth going on, once in two or three weeks. All plants grown for decorative purposes are particularly useful when of large size in proportion to the pots in which they are grown, and therefore require the feeding system to be carried out in a regular manner, gradually lessening the quantity of rich

food for a few weeks previous to their being used for embellishing rooms, so that the plants will not experience the check they certainly would do were it suddenly withheld.

Any plants that have become sickly looking can often, by the aid of a few doses of nitrate of soda, be quickly brought to a perfect state of health again; but being very powerful in its action this must be used in small quantities, a piece about the size of a marble is large enough for a 12-inch pot. This fertiliser has also the effect of forcing plants on much more quickly than other manures, and is therefore valuable for assisting those that are naturally of slow growth. I have not yet traced its effect on many kinds of Heaths, but with Erica hyemalis and the numerous varieties of Epacris, a few doses of nitrate of soda given when the plants are making their growth produce good results, the growth being made very quickly and possessing a fine healthy appearance. I also find that during the summer months, when soft water cannot be obtained for them, a little dissolved in the water used at the rate of a teaspoonful to 2 gallons of water will keep the plants in capital health; whereas if hard water is used without the addition of soda or some other substitute the young growths assume a brownish tint which is not in the least desirable. There can be no doubt that all kinds of plants are greatly benefited by having frequent changes in the food supplied to them. A little close observation will soon convince anyone on that point. I have often noticed that when the use of one kind of manure is continued for several weeks the plants receiving it do not respond to its stimulating influences so readily as when it was first given. When such is the case give a few waterings with clear water and then apply some other kind of manure, and health and vigour will be continued.

Perhaps no plants pay better for judicious feeding than Roses in pots, as it is not often convenient to have them in very large pots; but with liberal top-dressings and feeding they can be kept healthy and strong in the same sized pots for years. When the shoots have grown a couple of inches they should have liquid manure at each alternate watering for a week, then a sprinkling of guano and Clay's fertiliser mixed as above mentioned, to be followed by two or three supplies of clear water. Soot water is made by placing some soot in a bag and soaking it for a few hours in a tub, always taking care not to use it strong enough to leave a sediment on the surface soil of the pots. If this course of feeding is carried out regularly in accordance with the above instructions, and other conditions are favourable, successful results will assuredly follow, and will also be the means of producing plants of the sizes most useful in much smaller pots than they are generally met with.—H. Dunkin.

HOLLYHOCKS.

Observing an article by "F. M." in the Journal recently respecting our Hollyhocks, and in response to the editorial request I beg to submit a short account of my experience with the disease. Late in the autumn of 1885 I observed a few spots of the fungus on the leaves of some of our Hollyhock plants. This was the first time of attack. I removed the foliage thus affected and took little further notice of it, as it seemed to make no progress of any moment during that season, but to my great consternation the whole collection was attacked early the following spring. I tried various insecticides, but without effect. We propagated our usual quantity of spring-grafted plants, which went on fairly well, considering the circumstances, for a short time; in fact they were fine young plants (with the exception of a few spots of disease) hardened to the temperature of a cold greenhouse. This was about the last week in March or the first week in April. The fungus then began to spread with great rapidity over every leaf, and appeared to successfully frustrate every effort to grow that the plants could make, and my exhibition prospects for that season were spoiled. I kept them in a cold frame by themselves (they were established in small pots) and planted all the old stools out in the garden, as they, too, were diseased.

About the middle of May I commenced operations with the young plants by cutting them all down to the surface of the soil in the pots, leaving two eyes on each plant, and stood them altogether outside in a corner, covering them 2 or 3 inches deep with light soil, and there they remained till they grew through the soil, the shoots coming quite clean and healthy in about three weeks. Those plants have never again been affected with disease, but during that period the old plants in the garden were being destroyed by the fungus, and towards the middle of August the disease was rampant, killing many leaves and a few of the plants. The blooms were very poor that season compared with what they had generally been, as they were checked when about half-developed through the loss of the foliage. I set to work in the autumn, about the first week in September, and cut every plant in the garden down to within a few inches of the ground, burnt every stem and vestige of leaf, thoroughly washed the stakes and stored them away, and buried every stool in fine soil. In a few weeks the plants began to show themselves, and were clean and healthy. As they appeared we lifted the plants late in October, stored them in a cold frame, and have never seen any disease since. I now possess healthy plants that would gratify the most enthusiastic admirer of this noble autumn flower.

This system is not altogether new, for my valued friend, Mr. Jos. Oliver of Eslington Park, recommended the same practice some years ago. He is a great lover of Hollyhocks, and a great hater of Hollyhock disease. I may here state that Mr. Oliver is a grower, also a raiser of Hollyhocks of no mean calibre. He has two seedlings of the highest merit—viz., Robert Ryle and Agnes Ryle, the former a light red of large size and very full and well-shaped; the latter a large deep golden yellow quite distinct. Mr. Oliver was good enough to let me have these a few years ago to grow privately, and I think very highly of them.

Having often been asked if the Hollyhock is in as good a form now as it was twenty or thirty years ago, I most emphatically say "Yes," if you look for them in the right direction. During the above-named period, my uncle, Mr. Thomas Fenwick, and my brother, Mr. T. Finlay, were growers and exhibitors of the foremost rank, and they will tell anyone that Hercules was always one of the very best Hollyhocks grown, if you get the true variety. The late Lord Hawke was a formidable antagonist, but he never had his flowers nearly so large as those of the north country growers, but always clean and neatly finished. I have one of Lord Hawke's varieties now—viz., Ruby Queen, a splendid flower, always finishing well. Moreover, I possess the true Hercules, Bullion, Majestic, and Conquest, all of which were grown twenty years ago, and were even amongst the very best, but some of my seedlings from those varieties are quite equal to, and, in some instances, better than their parents. The variety, Mrs. Maynard, which is a cross between Hercules and Bullion, is quite equal to the parents in quality, and quite distinct. Then, again, we have Grace Darling, which is, in my opinion, the best Hollyhock in cultivation, also Favourite, a clear silvery lilac, almost unapproached in size, and certainly so in colour, and Queen of the Yellows. A clergyman of no mean floral interest, whilst looking through our collection before we cut for the Newcastle Show last year, minutely inspected and admired all the varieties. Queen of the Yellows, in the best form I ever saw her, was one of the last the rev. gentleman came to. He stood silently for a few moments, and then exclaimed, "Ah! I must lift my hat to this gem, for this is the Queen of the Yellows, and truly the queen of all the Hollyhocks."—George Finlay, *East Layton Hall, Darlington.*

CROPS THAT PAY.

South and north borders were formed, not by building costly walls, but by erecting boards 6 feet high. Posts were inserted 12 feet apart, and well tarred before they were placed into the ground. To these were nailed 2 by 3-inch deals, one a foot from the base, and the other the same distance from the top. Boards, a foot wide and 6 feet high, were nailed to these, the base resting on a single row of bricks to keep them off the soil, and the whole was well tarred. This is a cheap method certainly of providing warm borders and invaluable positions for Tomatoes and many other fruits. Whatever may be urged in favour of walls, plants in general would not grow better near them, or with greater rapidity attached to them, than they will near black boards. These absorb a greater quantity of heat than brick walls, and the heat radiated warms the air to such an extent that it is favourable to the growth of early crops and the rapid maturation of fruit. The borders, back and front, are 10 and 12 feet wide, between them are squares or flats of ground 25 to 30 yards in width. The boards are sufficiently high to protect Potatoes from early frosts when they come with a north wind. The first one or two in the row may be sometimes caught, but they are not certain of escaping when frost comes with the wind in any other quarter.

What are grown on these borders that pay? and to what purpose are the boards employed other than to provide shelter? are only natural questions to ask. At intervals of a few years the borders back and front are double dug, and when subjected to this process, which is done directly the autumn crop is removed, the lowest spit only is enriched with manure. The surface is manured when the crop is planted, or directly before. When the ground is frequently trenched the lower spit can be turned on the surface without the slightest fear of evil consequences. The surface spit that is turned to the base is naturally fertile, and on the top of this is placed the remains of Mushroom beds. Material from which we do not fear much will be washed away. The surface is dressed with nearly fresh manure. When the borders are planted with Potatoes the manure is not placed into the drills, as frequently practised, but

spread on the surface and forked well in. The same practice is followed when the borders are planted with Cos Lettuces and Kidney Beans between them. The earliest Cabbage Lettuces are produced by planting two or three rows at the foot of the boards, as well as in the manner described. In this position they grow rapidly, and are cleared from the ground just before the Cos Lettuces are ready, therefore pay well for the trouble and ground they occupy. The Cos Lettuces planted on the open quarters form a capital succession to those on the warm borders. These seldom realise less than 8d. per dozen, and are often fetched from the ground at that price. From this ground another valuable crop can be taken, for they are all cleared from the ground by the end of June. But we rarely occupy the ground fully with Lettuces, taking them principally between other crops, except on the north borders, and these are planted from sowings made after the middle of April to the end of May. When we plant the principal portion of the ground on the open flats in every alternate row of Lettuces we miss planting every other plant. This allows of Brussels Sprouts or Veitch's Autumn Giant Cauliflowers being planted when they are ready, and then occupy the whole of the ground when the Lettuce is cleared away.

But I must return to the south borders, and may here say that the variety of Kidney Bean grown is Osborn's Forcing, and we think most highly of one called Emerald Gem—a new one ; the pods are beautifully green, better in this respect than Osborn's, but it is a few days later. For the main crop Canadian Wonder alone is grown. It is a most prolific Bean if the ground is well and deeply worked and liberally manured ; 2 feet from row to row is too close to plant it ; to give it a chance of developing itself the rows should be 6 inches, or even 1 foot further apart. They will pay well for the room ; nothing is gained by crowding them. Let it be understood that double rows are planted in the case of both varieties, the former 4 inches from bean to bean, which are angled, and the latter 6 inches apart. By placing them at the proper distance when they are sown, which may take a little longer, but thinning afterwards is dispensed with. Boys are better than men for putting in the seed ; they soon become experts ; offer them a small prize of 2s. or so for the boy that plants them most quickly and best. Half the resources of the Kidney Bean are never developed, especially in private gardens, where they are only demanded now and again. If they are only attended to they will continue growing and fruiting for a remarkable length of time. We gather twice a week, and if a bean has been missed and shows signs of being too old it is not left on the plants for seed, but pulled off and thrown away. They should be picked close every time, then they will continue growing and yield tender beans, but once allow them to devote their energies to the production of seed, growth is quickly brought to a standstill, and tender produce that can only be appreciated will be out of the question. I know nothing amongst vegetables more objectionable than tough Beans ; they are far worse than old Peas, but if this simple method is followed useful highly prized produce will result.

The early Potatoes planted in rows 2 feet apart, and about 8 inches from set to set. The sets are well sprit and are planted moderately deep, then earthed up. They are planted on the ridge fashion. I have no faith in the lazy method of laying them on the surface and covering them over with a few inches of soil. Those that plant on these principles have them through the ground first, and may after be heard to boast, "Our Potatoes are up." But do they dig first? that is the main object we must keep in view. I know arguments in favour of shallow planting may be adduced, and the objections to the principle are too strong to tempt me to follow the plan. My object in planting moderately deep and liberally covering them with earth is not to have them up, but to keep them under the ground as long as possible. They are safe there, they are not when their tender tops are through the ground. Directly they show signs of coming through, more soil is scraped over them until this is impossible, then they take their chance. When once they are through the ridges are hoed well down to stop small weeds that may start, and then earth them up again. They are not touched again until they are dug. It is surprising after the last operation how they grow, and people that see them can scarcely realise that they have only had the protection that the ground affords. They are not so very late in the market, for all from the south borders averaged 1½d. a pound, after the expense of taking them to the market had been deducted. The variety formerly grown was the old Ashleaf, which by accident we lost ; since then we have grown a variety called Kidney Dwarf Top, and if it is not the old Ashleaf it is a very near relation. The haulm is no larger, and the tubers, which scarcely seem so long, are all clustered close together.

What I have to say about other Potatoes will be deferred for the present, but if Walcheren, Eclipse, or Autumn Giant Cauliflowers have not been planted between these early Potatoes, the ground is filled directly they are dug with small Cabbage, such as Heartwell Early Marrow, Little Pixie, Ellam's Early, or Coleworts, generally the last, because they are hardiest, and often sell well if other vegetables are scarce ; but if there is anything that can be had larger, there is no market for these small but delicious little Cabbages. They are valuable crops and pay well in some localities ; but in my neighbourhood they look with disdain on anything much less than Robinson's Champion Drumhead. When this was discovered I decided to leave most of the Cabbage growing to somebody else, and generally take Cauliflowers as the second crop, or if they are not planted and showery weather follows the lifting of the Potatoes, the border is planted with Cos Lettuces, or Turnips are sown. This year, although very dry at planting time, Lettuces proved a remunerative crop, but this is a matter that in each individual case must be decided by the locality and the requirements of the market.

All my difficulties were not overcome by the erection of boards for the provision of north and south borders. No, they had only just begun, and I quickly saw before me another outlay, as no provision had been made for raising the plants, and to this a few words must be devoted another time.—MARKETER.



CYPRIPEDIUM FAIRRIEANUM.

A PLANT of this beautiful but rare Orchid was shown at South Kensington last year by Mr. F. G. Tautz, Studley House, Hammersmith, and from this the drawing was prepared represented in the engraving (fig. 18). It is now over thirty years since this Cypripedium was introduced from Assam, and it first flowered in Mr. A. Fairrie's collection at Aigburth, Liverpool, in whose honour it was subsequently named. Owing to the plant being of slower growth than many other members of the same family, it still remains scarce, and is valued accordingly. In habit it is dwarf, with small light green leaves, but the flowers are very conspicuous and distinct, both in shape and colour. The dorsal sepal is white, with a greenish tint, heavily and regularly veined with purplish crimson ; the petals are curiously deflexed, with the points upturning, also greenish-white with crimson-purple veins and a ciliated margin ; the lip is neat in form, greenish, with a few faint reddish veins. It will be remembered that C. Fairrieanum is one of the parents of the choice hybrid C. vexillarium, which was raised in Messrs. Veitch & Sons' establishment by Mr. Dominy some years ago.—L. C.

DENDROBIUM HILLI.

YOUR correspondent "G." is in error when he states that this species is dedicated to Mr. C. G. Hill of Nottingham. It is figured in the "Bot. Mag." (t. 5261), and is there stated to have been received at Kew from Mr. Walter Hill, Superintendent of the Botanic Garden at Moreton Bay, and Sir W. Jackson Hooker says, "we gladly dedicate it to him." It is a distinct and very pretty species, and may also be seen in flower at St. Albans in the nurseries of Messrs. F. Sander & Co.—J. D.

IN my note last week I was in error in supposing the above to be named in honour of C. G. Hill, Esq.

It is beautifully illustrated in Bateman's "Second Century of Orchidaceous Plants," plate 195. The accompanying note may be useful at the present time, as there appears to be some confusion between this and D. speciosum. "In his notice of this plant (1861) Sir William Hooker wrote as follows :—'Many years ago Mr. J. Smith assures me living samples of this fine Dendrobium were sent from Moreton Bay to the Royal Gardens of Kew, with an opinion expressed that it might possibly be the D. undulatum of Brown's 'Prodromus,' p. 332. I do not find that they ever flowered, but one thing is certain, that I possess in my herbarium a specimen of the true D. undulatum of Mr. Brown with the correct name in Mr. Cunningham's handwriting, and another specimen from Albany Island from A. C. Gregory, and also from Port Curtis, gathered by Mr. M'Gillivary during the voyage of the 'Rattlesnake' (1847). It is a very different species from that now under consideration. The D. undulatum has, as its name would imply, singularly undulated petals and sepals of very lurid colours and sharp segments to the lobes of the lip, and it is also a native of Java. Dr. Lindley has shown that his D. discolor, from the latter country, figured in

'Bot. Reg.' for 1841, table 52, is identical with Mr. Brown's D. undulatum."

"The present plant must then be considered a new species, and once recognised as distinct in consequence of the greater length of the pseudo-bulbs or stems and of the leaves. The dense drooping racemes of D. Hilli and the longer and more tapering sepals,

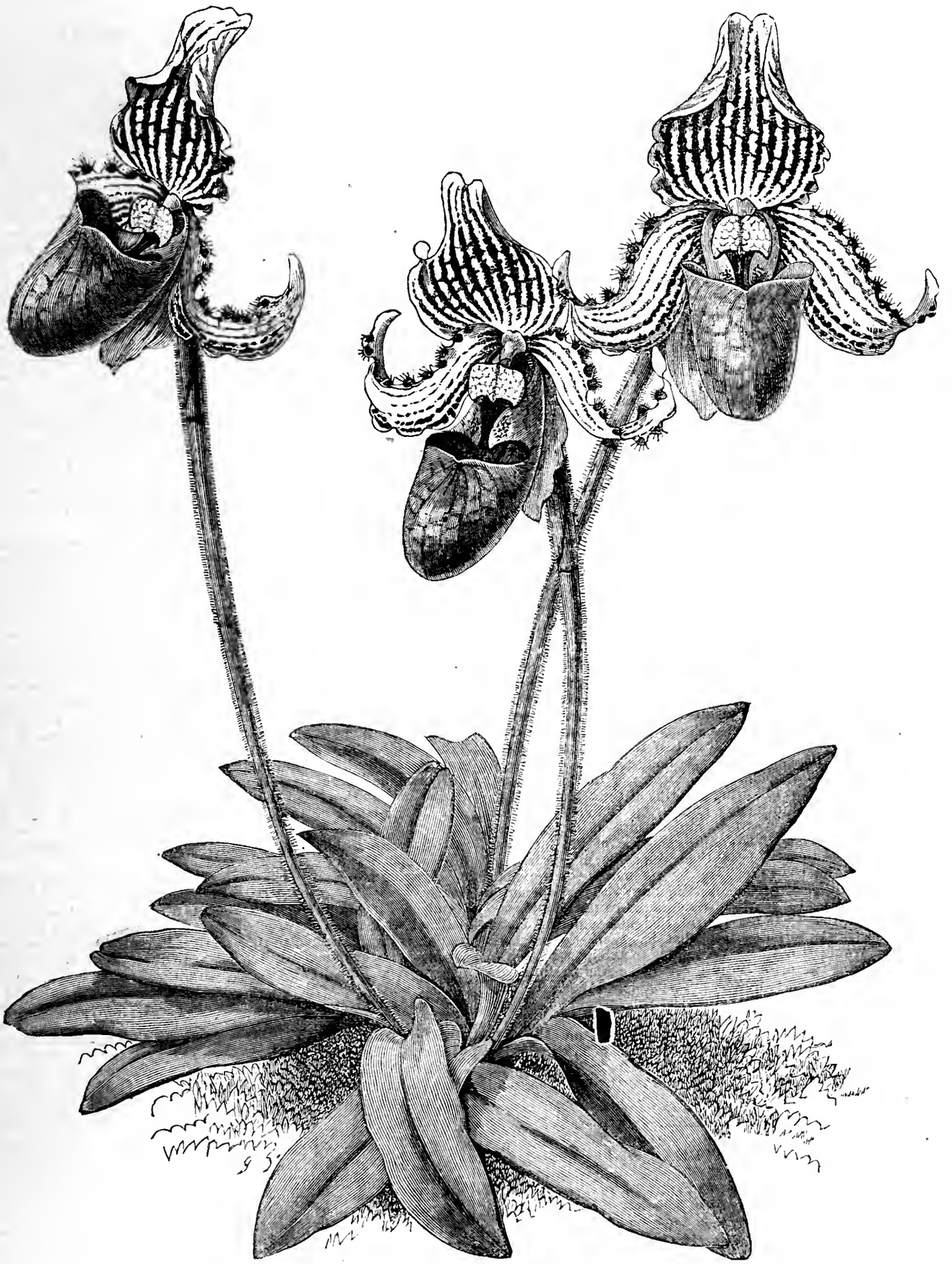


FIG. 18—CYPRIPEDIUM FAIRRIEANUM.

as our living specimens were derived from the very zealous botanist and superintendent of the botanic garden at Moreton Bay, Mr. Walter Hill, Sir William dedicated it to him. Even without the flowers this plant, standing by the side of D. speciosum, may be at once recognised as distinct from it by the greater length of the pseudo-bulbs or stems and of the leaves, together with the long narrow linear petals, are additional points of distinction. It requires, as might be expected, more heat than D. speciosum, but must have, like that species, a decided season of rest in a dry house."—G.

CYRTOCHILUM MACULATUM.

This old species is also in flower at St. Albans. It first flowered in the gardens of the Royal Horticultural Society, from specimens sent home by Mr. Hartweg, who found it near Vera Cruz. The flowers have narrow sepals and petals, densely blotched reddish maroon; the lip white and yellow. It is a vigorous-growing plant, and the spikes of flowers have an excellent effect, and if it is winter or early spring flowering, will be very useful to arrange amongst other plants producing more gaudy coloured flowers. It has been referred to Oncidium, and is in cultivation under the name of Oncidium maculatum.

EPIDENDRUM ENDRESI.

A lovely little Orchid, now in flower with Messrs. Sander & Co. The whole plant might be packed into an ordinary snuff box, and its lovely amethyst flowers, in colour like those of Saccolabium cœleste, are borne on stems about 2 inches high. It was growing in the warmest house, and with it in charming contrast were numerous examples of a recent introduction of the firm, Angræcum Sanderianum. It was recently exhibited at South Kensington, where it received a first-class certificate of merit. It was described in this Journal recently; but I can add from experience that it is very vigorous in growth, and flowers most freely, quite small plants producing strong spikes of its glistening white flowers: they sparkle in the sunlight. The lovely tiny A. hyaloides was, as usual, flowering itself to death. Amongst them—it is quite a gem in its way—another recent species, A. Scottianum, was flowering quite freely. This is now much more plentiful, and moderate in price.—J. D.

SIZE v. QUALITY—FRUIT AT NEWCASTLE.

When I referred to Mr. Thomson's article I had in mind Black Hamburgh Grapes, which I had seen as large and as black as could be found hanging in the vineries at Drumlanrig, as well as other fruits, also large, including Pines as big as 24-sized pots, therefore I thought the opportunity a favourable one for asking if your correspondent could find fault with and recommend such fine examples of culture to be consigned to the rubbish heap; and as his opinions would have weight, I also thought it advisable to learn whether he considered Tomatoes ripe and fit for table, dessert fruit; but as no answer is given on that subject, I have no alternative but to act on the advice in hand, and when I exhibit again at Newcastle I shall include Tomatoes in my collection, and if they are not recognised "the fat will be in the fire."

If "Old Hand" could claim the same title for his head he could have seen that my Pears at the above Show were all distinct varieties, and I think it would have been a most easy task for the most casual observer to have distinguished the difference between any of the dishes staged by me, as the following list of names will show:—1, Williams's Bon Chrêtien; 2, Doyenné d'Hiver; 3, Doyenné d'Eté; 4, Louise Bonne of Jersey; 5, Citron des Carmes; 6, Jargonelle; 7, Windsor; 8, Early Crawford. In addition to these we had the following also ripe at the end of August; —Lammas, Beurré Giffard, Huntingdon, and Green Chisels—so in my case it was quite unnecessary to resort to any attempt at fraud, as my friend insinuates. "Old Hand" is doubtless aware of the fact that there are few better collections of Pears than we possess, and in favourable seasons the sizes he boasts of are by no means exceptional, especially for Beurré Diels. In common with many other gardeners I am kept pretty well informed of markets values, and I can get double the price for Bon Chrêtien that I can for Beurré Diel, although the latter attains twice the size of the former. But what has market value to do with the matter? Would it not be as reasonable to exhibit a horse in a class for pigs, and claim the prize because the horse was of infinitely more value? The comparison is quite as justifiable. I took the precaution to inquire of the Secretary whether the rules would be adhered to. That gentleman replied in the affirmative that "all fruit must be ripe and fit for table;" and it is quite evident that I am the only exhibitor who staged fifty dishes of ripe fruit, as stipulated, for the Jubilee Prize. I anticipate the usual compliments to be forthcoming, that my exhibits received the awards they were worthy of. This is all I have to say at present.—J. H. Goodacre.

STRATAGEM PEA.

In reference to Mr. G. Garner's remarks in last week's issue anent the failure of Stratagem Peas with him, I beg leave to offer the following remarks if you consider them worth inserting. I have grown Stratagem Peas a few years here in trenches with liberal quantities of manure with the results as described by Mr. Garner, with the addition of brown spots on the pods, the produce being diminutive and of inferior flavour. I tried them in different ways without the desired result till I chanced to sow some Peas in a bed that had been well manured the previous spring for growing show Onions, without any further preparation than clearing off weeds. Nicks were made 3 inches deep, and the Peas sown 3 inches apart, 6 inches between the rows, the soil filled in and made as firm as before. The result was all that could be desired—stems as thick as Raspberry canes, 3½ feet high, with forty pods to a plant, 15 to 18 inches across the foliage, with tendrils like Cucumber plants, and from eight to ten large peas in each pod of exquisite flavour. I think if Mr. G. Garner tries the firm ground he will be satisfied with the result, of course giving them every attention with water and liquid manure.—John Swan.

THWAITE HOUSE, COTTINGHAM.

Picturesquely situated at the foot of the Yorkshire wolds, and within easy driving distance of the busy seaport town of Hull, stands the delightful country residence of Sir Albert K. Rollit, M.P. On entering the grounds the visitor is at once surprised at the vast extent of lawn and pleasure grounds, which for beauty and extent cannot be surpassed in the East Riding. When passing to the drive from the eastern side of the mansion two splendid plants of Phormium tenax are seen, which are strikingly effective in the position they occupy on a strip of lawn on each side of the road. The house is clothed with plants, such as Ivy, Clematis Jackmanni, Tea Roses, and Pyrus japonica and Maulei in fruit. On reaching the northern side a splendid view of the extensive grounds is obtained, and the fine Palms, Dracænas, Phormiums, Agaves, and standard Bays dotted about, with water in the background, impart to the whole place a tropical appearance not easily forgotten, and causes one to think whether the style of ornamentation is not more effective than the stereotyped bedding so generally seen.

Immediately in front of the house is the flower garden, the beds arranged round a large fountain, in the base of which are growing Nymphæas, Herpestis reflexa, and other aquatics, and many fine golden orfe, golden tench, and other rare fish. In the bedding arrangements Crystal Palace Gem, Robert Fish, Flower of Spring, McMahon, and West Brighton Gem Pelargoniums were largely used. Tropæolum Vesuvius, Coleus Verschaffelti, Lobelias, and Alternantheras have also been used with good effect. Raised circular beds of Pelargonium Henry Jacoby were effective. Forming a half circle to those beds on the opposite side from the house, are immense Agaves, splendid specimens brought from the Riviera. Another large bed filled with succulents and edged with varieties of Mesembryanthemums contains many gems of this interesting class of plants, including a good specimen of Agave ferox. Of course a summer view is here described.

The lake, some five acres in extent, is fed by powerful springs and a small stream which enters on the western side of the grounds and passes through them, the water clear as crystal, and is abundantly stocked with fish, including the American brook trout (Salmo fontanalis), the great lake trout (Salmo ferox), the land-locked salmon (Salmo lacustris), the white fish (Corregonus albus), golden orfe, tench, &c. Feeding is done on an extensive scale, pisciculture being a pursuit with Sir Albert, who is Vice-President of the National Fish Culture Association at South Kensington and Delaford Park. Many species of waterfowl of the rare kinds also find a happy home here, and breed upon the islands.

Wending our way over rustic bridges we find Rhododendrons and Ghent Azaleas in enormous quantities, in fine variety and surprisingly vigorous; Liliums of various kinds planted amongst them give a grand effect, whilst the Heather, red and white, with which many of the shrubberies are edged, luxuriates in a manner seldom seen off its native moor. Bilberries and Cranberries are also seen in fine clumps. Large beds of Roses in various parts of the grounds in all the finest varieties and all edged with Gloire de Dijon. These are tied down to a wire 10 inches from the ground. In that way they are easily protected from the frost, and by keeping the growths tied down they produce enormous quantities of blooms.

Leaving much that is attractive outside, we find many plants in the houses especially interesting. Orchids, Palms; also Ferns, Peaches, Oranges, Vines, and greenhouse plants all have houses devoted to their culture, whilst numbers of pits and frames are required for the production of plants for decorative purposes. The Palm stove contains many fine specimens, which have already made their mark in the exhibition tent. Cocos Weddelliana, 7 feet across, with about thirty leaves; Kentia canterburyana, 7 feet high, with twelve fine leaves; a splendid Latania borbonica 12 feet across, with eighteen fine leaves: Areca Verschaffelti, Thrinax elegans, and many others all in the finest possible condition. Mention must also be made of a splendid specimen of the rare and beautiful Cocos neo-caledonica, with 5½ feet stem, carrying a splendid head, and some fine Crotons beautifully coloured, fine Ixoras, Anthuriums, Stephanotis, and Rondeletias, all fine specimens. These with an exceptional collection of economic plants and large Bananas, Ipomæas, Clerodendrons, and Combretum purpureum on the rafters furnish the house.

The greenhouse contains fine specimen Heaths in grand condition; also large Tree Ferns, Camellias, Azaleas, and a good collection of hard-wooded plants generally, hybrid Rhododendrons, and a splendid specimen Dasylirion acrotrichum. Lapagerias, Tacsonias, and other climbers occupy the roof. The fernery, a winding structure 60 feet in height, is entered from the greenhouse, and presents a pretty sight, the back wall covered with Ficus repens and Caladium, and Begonias freely interspersed among the Ferns in rockwork. On the front stage are healthy Gleichenias, Dicksonias, &c. In the centre is a tank, in which we note aquaties and fish again thriving together, Aponogeton distachyon, Limnocharis Humboldti, and others, with golden orfe, tench, and other fish.

The Orchid house contains Cattleyas, Lælias, Cypripediums, Oncidiums, Phalænopsis, &c., with Nepenthes well "pitchered," whilst on the roof Dipladenias bloom profusely, splendid flowers of hybrida, amabilis and Regina being counted by the dozen. Another division is

occupied with Allamandas; Hendersoni, nobilis, Sehotti, chelsoni, and grandiflora are all grown. Eucharis, Dendrobiums, and small Palms occupy the stages. The orangery is filled with specimens in tubs (the largest 9 feet by 7 feet), and include the Maltese Blood, Jaffa, Brazilian, Otaheite, and Tangerine, the flowers and fruits from those being highly appreciated. There are also fine Lemons and Citrons. The Peach trees and Vines are in fine condition, all recently planted and carrying splendid crops. The fruit garden is well stocked with pyramid Pears and Apples, Ribston Pippin and Cox's Orange being the favourite varieties. Quinces, Medlars, Mulberries, and Blackberries are also grown, and the kitchen garden has the stamp of good management throughout.

Much more might be written about this interesting garden, but enough has been said to show its owner is a generous patron of horticulture. The gardens are under the management of Mr. A. Greaves, who is to be congratulated on the condition of everything under his charge. —VISITOR.



MOSS ROSES.

IN every garden, large or small, Moss Roses should be accorded a position. However beautiful other Roses may be, none surpasses or are more admired than the blooms of these charming Roses. Although there are numbers of varieties, there are not more than four that are really worth growing, except perhaps as objects in the shrubbery and other borders. The two best are the Old Moss and White Bath. These two are true Moss Roses. None of the others can be compared with them for the quantity or beauty of the moss that surrounds their buds. The Crested Moss is most peculiar, and should be included by all who grow Moss Roses.

For climbing up a pillar or for covering a fence, Baron de Wassenaer is decidedly the most suitable. It flowers freely when grown on this principle, and the blooms, which are produced in clusters, are fairly well mossed. Gloire des Mousseuses forces better than any other variety. Although Moss Roses are not well adapted for very early forcing, this one flowers freely, and may be had in presentable condition after the middle of March, and it is even more beautiful than when allowed to flower naturally outside.

Lanei is conspicuous for its colour, and being a good grower is well adapted for shrubbery borders. The buds are not well mossed, besides the moss surrounding them is too dark and too short to present such a charming appearance as either of those first named. This has also another great defect, for it appears to be a general favourite with aphides. The buds are very gummy, and are the first to be attacked. This objectionable feature is not decreased afterwards.

Blanche Moreau came out with the highest credentials, but those who grow it by the side of White Bath will find that it cannot be compared with that excellent variety. It is, however, worth a place in the shrubbery border, for it is one of the strongest growers. It quickly forms a large and imposing bush; it flowers freely if the wood is well ripened and not pruned too severely. Although a strong grower it is almost certain to be severely attacked by mildew. It has always been one of the first in our moderately light soil, while the Old Moss and White Bath have not been attacked.

All the varieties named do very well worked on the Briar, except the two old ones, which do not appear to grow freely. With us at least they do best on their own roots. Both are weak growers, but in rich fertile soil they push up moderately strong shoots from the base. I have grown nearly every variety, and find all do well when planted the same as other Roses, except the two I have recommended as the best, which appear to do best when they are practically laid in or planted in a sloping direction, being careful not to bury the roots deeply. By this method they appear to throw up best from the base. Celini has proved the poorest grower of all, for it failed with us both on its own roots and worked.

In pruning Moss Roses we have found it to be the best policy to prune rather severely. All the weakest shoots should be cut back to one eye, while strong ones for pegging down should be cut back to within 1 foot or 15 inches. We prefer to plant closer together than would be the case if the shoots were left nearly their whole length when pegged down. Baron de Wassenaer, although it flowers freely when but slightly pruned, has a tendency to become bare towards the base unless the shoots are trained as much as possible in a horizontal position after pruning. This induces the back eyes to break freely, which not only insures more buds, but the growths starting from the base upon which the flowers will be produced the following season.—B. P.

SOUVENIR DE LA MALMAISON.

IN most gardens this grand old Bourbon Rose is generally seen and treated as a dwarf, being pruned closely back every year. I think it is not generally known that it is a splendid Rose for training to a pillar or against a wall. Even for this purpose it is not necessary that it should have a sunny or warm aspect, for it will grow and flower amazingly even on a north wall. Until that severe winter of a few years ago, when the thermometer fell below zero, we had a plant that had reached a height of 14 feet against a wall with a north-eastern aspect; and although this would not be regarded a favourable position it was sadly overshaded by Hollies. In spite of this, however, it flowers profusely twice yearly, in early summer and again in autumn, in fact long after slight frosts have set in. In some seasons I have gathered very creditable Roses from this tree in December. Although I had about a hundred of this variety on the Briar and upon their own roots, this old plant always produced the largest blooms.

Although the Bourbons are looked upon as rather tender Roses, and are recommended generally to be planted in light rich soil, it has struck me that it may be the better treatment that renders them less hardy than they would otherwise be. Light rich soil unquestionably encourages a soft succulent growth that cannot endure severe weather. The old tree to which I have referred must have braved many a winter, and probably this was largely due to the good soil in which it was growing. It was planted in a narrow border about 10 inches wider with a number of other varieties, and to my knowledge had no manure applied to its roots for over ten years. From this border it could ramble into a gravel walk, and beyond this there are no attractions that would induce the roots to travel. No doubt the wood made was firm, although the aspect was not favourable for ripening it well, and the firmness of the wood may be the secret of the fine flowers it used to produce.—R. G. W.

SHORTENING SEEDLING BRIAR ROOTS.

A CORRESPONDENT in a recent issue seemed to be in favour of planting the seedling Briar without cutting or shortening the tap roots. In his case evidently the tap root is no drawback. But really it is so. If this correspondent wishes to get the same effect which would be produced by leaving the roots of the Briars long he has only to plant ordinary-grown plants about 18 inches deep. He may try this for one season; after that I think he will discover that what Canon, or rather Dean, Hole says in his "Book on Roses" is correct. What the Dean says is, "Plant as near the surface as possible; deep planting means disease, debility, and death" I say ditto to that. The soil I cultivate, where I have grown Roses for some years, is a barren rock on which long cultivation has accumulated about 6 inches of soil. During the dry burning season we had in 1887 my Roses, planted near the surface, while they no doubt suffered a great deal, in my opinion did much better than if they had been planted, or rather buried, deeper.—D. GILMOUR, JUN.

BUDDING ROSES ON SEEDLING BRIAR.

A CORRESPONDENT "R." (page 86), asks for information on this subject. I have read somewhere directions for cooking a hare, which begin "First catch your hare." I am afraid my friend is somewhat in the position of the cook who has not yet caught the hare. If the seed were dried—that is, not sown immediately it was gathered—it will most probably not germinate for eighteen months, by which time "R." will hate the sight of the box in which he has sown the seed. I do not need, I think, under the circumstances, to go on to give directions as to the budding of the Briars which are yet to grow, there will be time enough for that this time next year. The best plan "R." can follow is to sow the seed outside in a bed, and when the Briars grow and are strong enough they may be budded where they grow, or transplanted at any time of the year when Roses are moved. No doubt the richer the land where the Briars are sown the stronger will be the growth.—D. GILMOUR, JUN.

OLD AND NEW LAWNS.

THE value of lawns for use and ornament depends chiefly on the keeping, though some, through natural advantages of situation, give no trouble as compared with others less favourably located. Our climate and soil are peculiarly favourable to grasses, so that there is no excuse for a bad lawn in any position in these islands. Daisies, Plantains, and other weeds are a great disfigurement, and equally objectionable are the coarser grasses. Moss in many may be seen very much more abundant than grass, and lichen is not absent in some cases. There is no satisfaction in an uneven, weedy, patchy, mossy lawn. There are lawns that only looked well once—*i.e.*, a brief period after formation. Probably the soil had no particular preparation, draining was not considered, no care was taken to provide a regular depth of soil for laying turf or sowing seeds, and the location whence the turf was taken was not considered. Some lawns get into a bad state through neglect; the soil is good, the drainage all that is desired, yet the lawn is poor and thin of the coveted herbage to make a close, firm, yet elastic turf. Poverty is the cause of so many lawns being as they are; what they want is cultivation, the frequent cutting and clearing off is impoverishment. Some soils will bear the removal without showing distress for a long time; indeed, some lawns, from the particular quality of the soil, will improve for many years, but the majority are not in that condition.

UNEVEN LAWNS.—These are such as have inequalities from the subsidence of the soil over drains, filling up hollows, taking out trees, or alterations, &c., and which are not so pronounced as to necessitate taking up the whole of the turf, leveling and relaying. Such slight unevenness as a sunk drain, an inequality occasioned by the removal of a tree, when rectified, converts an otherwise unserviceable lawn into one suitable for tennis. Paring the turf, filling with soil similar in quality to that forming the lawn, and firmly so as not to settle, relaying and

beating will do wonders; but work of this kind needs to be done expeditiously, and at a time when it will give the turf a chance, as when it is done late, or after the grass begins to grow, there is danger of its not being equal with the rest, or watering must be resorted to. Do not employ rich soil: it will cause the grass to grow rankly, and mar the appearance, both before and after cutting, for a long time.

Mossy and Patchy Lawns.—If there be much moss, scratch it off, or as much as possible, with an iron rake. Treat the places bare of grass similarly. Those that have the grass worn off should be pointed or lightened with a fork, applying a dressing of quicklime and wood ashes in equal parts, at the rate of half a bushel per rod. Failing those, apply a pound each nitrate of soda and muriate of potash. This should be done by March, or better, by the middle of February, and in a fortnight follow with a dressing of well decayed manure, that will work in. Leaf soil, or the rubbish heap material reduced to soil or passed through a ¾-inch sieve, will do. Five bushels per rod (six hundred per acre, about twenty tons) is a maximum quantity. Spread it evenly, rake with a hay rake every week, but not in very wet or dry weather. Early in April, with a prospect of rain, sow seed on the bare places with lawn grass seeds thickly, using discretion about the whole being seeded, and seek to make the whole even. Rake lightly, and roll it well down. Some may say they have no manure, but they can use 2 lbs. superphosphate, and a peck of soot per rod just before sowing the seeds, and rake it well in. If the early mowings are with the scythe it will be an advantage; any way, it should not be cut quite so close in early summer as an established lawn in good or even fair condition. In sowing the seed on very bare places use half a pound per rod, and correspondingly less, according to the quantity of grass.

General Lawns.—The first attempt at improvement must be in the direction of cleanliness. It is useless expecting the lawn to give a crop of thick set velvety turf if the finer grasses have to contend with Daisies, Plantains, Dandelions, Docks, coarse grasses, &c. Enough soil should be used over the lawn after grubbing up the weeds to make good all inequalities of surface, dressing with the back of a rake. If there be any moss, employ lime and wood ashes as before advised, but in less proportion of lime by half: or if nitrate of soda and muriate of potash be used take half the quantity of the former, and follow with a dressing of short manure or compost, or soot and superphosphate, treating as before advised, also as regards seeding where the grass is thin. Whenever the turf is not quite satisfactory prompt measures should be instituted. An application of manurial matter may be given occasionally, short manure or rich compost every second or third year, or wood ashes and soot applied in February or as soon after as the weather permits, equal quantities at the rate of a peck per rod, which will keep down moss and encourage a sufficient quantity of grass, or if not another dressing of soot may be applied later, and always during moist weather. A good rain will make all right as regards appearance and cleanliness. It may be mentioned that nothing does a lawn so much good as scratching it with an iron rake, and spreading the wormcasts, that being far better than making the surface impervious to air and rain by continual rolling in weather during which there is no prospect of grass growing.

There is benefit in other manures—sulphate of ammonia, for instance, 1 lb. per rod, and double the quantity of salt. Gypsum may also be mentioned, but it has the liability of encouraging too much Clover, which is objectionable on tennis grounds from keeping the turf wet in the autumn too long in the day, otherwise it is very useful on general lawns, and may be used at the rate of a ton per acre. For lasting and to encourage the finer grasses bonemeal at the rate of 20 bushels per acre is unrivalled, and I may conclude by stating that guano and the advertised manures so far as I have tried them are excellent, all of which should be applied in early spring in moist weather.—G. Abbey.

BEGONIA ODORATA.

This variety of Begonia is well suited for growing into neat little plants in small pots for winter flowering. The fragrance from its pure white flowers, which are borne in large trusses, is very agreeable. The details of culture are simple—indeed, anyone possessing a warm house during the winter and suitable convenience during the summer months can grow this Begonia to perfection by following the method of culture here described.

Towards the end of the present or early next month take short stout cuttings about 4 inches long, insert them in sandy soil singly in small pots, or about four in a 3-inch pot. Plunge the pots in a gentle bottom heat in the propagating house or under a handlight in the Cucumber or Melon house, where the temperature does not fall below 65°. When well rooted transfer the plants into pots one size larger, using soil two parts loam, one part peat, a dash of bone meal, and some sand. Place the plants on a shelf close to the glass, where the growth will be of a stocky short-jointed nature. When the plants are 6 inches high top them by pinching the point from each to induce side branches and suckers from the bottom, which make the strongest growth. When the pots are again filled with roots transfer into larger pots, 48 or 32 sizes being very useful where the plants are required for vases in the decoration of rooms Keep the plants on the shelf close to the glass during the summer, where the temperature does not fall below that indicated. Supply water to the roots freely, so that the foliage is retained in a healthy green state, alternating the supply with weak liquid manure when the pots are filled with roots. No more pinching will be needed, as from the first topping from three to six branches will be produced; the numbers of each will guide the cultivator as to the size of pots required. One stake to each plant, fixed in the centre, to which each branch may be loosely looped, or one stake to each stem may be used at will. The stems are rather short and firm in themselves, but a slight support may be of service to prevent accident. Moderate shade during the hottest part of the day during the summer months will assist in preserving healthy foliage. Towards the middle of September the shade may be dispensed with altogether, as after that date what sun there is will aid in ripening the growths, and the plants will flower more freely. Directly after Christmas the plants will commence flowering, and will continue for two or three months, the plants reaching the height of from 1 foot 6 inches to 2 feet 6 inches.—E. Molyneux.

[With this communication came flowers of the Begonia named, which amply testified to the correctness of our correspondent's remarks concerning its merits.]

PRIMULAS AT PERRY HILL.

Messrs. J. Carter & Co., High Holborn, have a most extensive display of Primulas in their Perry Hill nurseries at the present time, representing all the carefully proved old and new varieties sent out by this firm. Two span-roofed houses, each 100 feet in length, are devoted to the plants grown for seed, and there are upwards of 5000 plants flowering now that later on will yield a most valuable stock of seed, of which some pounds are required annually. The usefulness of Primula sinensis and its numerous varieties has been amply demonstrated in recent years, but few are aware of the continuous careful experiments needed to improve the "strains," or to keep good varieties true. Every day when the plants are in flower they are examined critically, and self or cross-fertilisation is assisted by a most tedious process. Primulas grown for seed-bearing, too, need some special knowledge of their peculiarities, as it is easy to have the plants so vigorous with coarse foliage that very few, or only imperfect seeds, will be produced. Sturdy, dwarf, yet well-developed plants are required, with bold substantial pure or highly coloured flowers, and these Messrs. Carter & Co. have evidently secured in their present season's stock.

Some of the principal varieties may be briefly noted, but all are good, and though novelties are eagerly sought nothing of an inferior character can be tolerated now. First on the list comes Holborn Blue, which has now been in cultivation six or seven years, and distinct as was the colour when first seen, it has been steadily improved since, a marked advance having been made in one selection this year. This is several shades darker than the original, one with well formed single flowers and round leaves. Near to this is Double Crimson, a fine acquisition of a rich dark crimson shade, the flowers having a little tuft of petals in the centre. Next to this is a grand single white with dark coloured Fern leaves, the flowers are of great substance and quite pure. Holborn Vermilion, a brilliantly coloured single variety, of compact habit, with dark stems. Holborn White Improved is a useful single variety with massive flowers in fine trusses, well above the plain green leaves, but there is also a selection from it with Fern leaves. This is a free and good constitutioned Primula for decorative purposes. Prince of Wales has double salmon-tinted flowers borne in large trusses, the leaf round, and the habit dwarf. Holborn Ruby is one of the graceful Fern-leaf type, with flowers of a soft pleasing colour. Holborn Fawn is very distinct, the flowers neat, tinted rosy fawn, with a lace-like white edge. Holborn Carmine is a strong growing variety, with round leaves and large bright flowers. Holborn Elaine is a Fern-leaf variety, with dark stems and handsome flowers. Holborn Magenta is an intensely deep crimson magenta single Primula, the flowers of great size in good trusses. It contrasts well with the white varieties. Holborn Salmon has delicately tinted flowers, and is of compact sturdy habit. Snowflake is a charming double white variety, faintly flush tinted, very free and admirable for cutting. Holborn Gold Leaf is a curiosity, with yellow foliage and pale pink flowers, very delicate. Holborn Pearl is one of the Fern-leaf type, with dark stems and delicately tinted flowers of fine shape and substance. Holborn Venus is distinct and pretty, the flowers of moderate size but good shape, dotted and streaked with pink on a white ground.

To produce these plants the seed is sown in June and July, so as to have a succession. The seedlings are first pricked out in boxes, then potted singly in "thumbs," and finally transferred into 48's, in which they flower. A compost which gives much satisfaction is formed of four barrowloads of yellow loam, two of old manure, and one of leaf mould with river sand. Owing to the artificial fertilisation resorted to the flowers do not remain long upon the plants after they are sufficiently expanded, but there is a succession which will maintain a display for some time yet.—X.

STOVE PLANTS.

The Acanthaceous genus Dipteracanthus includes a number of beautiful plants, natives of tropical South America, and useful for the decoration of stoves and warm conservatories in winter.

DIPTERACANTHUS.—The flowers produced from one-year-old plants are always the finest. If cuttings are struck in the spring they may be grown into plants sufficiently large for most purposes. The soil should consist of about equal parts of good leaf mould, peat, loam, and sand. They enjoy an abundant supply of water, and the temperature of an ordinary moist stove. Insect pests must be kept away by the frequent application of the syringe.

D. HERBSTI.—This species, though somewhat doubtfully referred to the present genus, is perhaps one of the very finest Acanthaceous plants for winter decoration. If proper attention is given to stopping the shoots during the growing season a handsome plant will have been formed by the end of September, about which time its flowers first begin to open, and continue to do so for some three months. It is a half-shrubby plant, producing opposite lanceolate leaves about 6 inches in length and about 2 inches in breadth, upper side deep green, with a grey band traversing the entire length of midrib on each side, the lower surface dull purple. Flowers produced in clusters of about five from the axils of the upper leaves; tube of corolla very slender and nearly 3 inches long, the upper portion much enlarged and pale rosy purple in colour, limb white, spreading, five-lobed, each lobe having a central notch or division.

D. AFFINIS.—Here we have another very fine plant, but still it must be confessed it has proved with us much less prolific than the preceding species. Neither is it naturally so purely a winter flowerer; this, however, can be overcome by continually stopping the young growths up to about the end of August. Leaves opposite, ovate acuminate at the apex, with an obtuse base upwards of 2 inches in length, deep green above, paler below. Flowers large, about the same length as the leaves, mostly solitary from the axils of the upper ones; tube long, and enlarging upwards; limb large and spreading, five-lobed; colour rich scarlet.

D. SPECTABILIS (fig. 19).—In this plant the leaves are ovate acuminate, slightly hairy, some 2 inches long, and deep green. Flowers produced from the axils of the leaves on the upper branches, mostly in pairs, large and spreading, of rich deep blue.

D. CAULESCENS.—Certainly less beautiful than either of the preceding, but the profusion with which its purplish-lilac flowers are produced through the very depth of winter amply compensates for its somewhat less decided colour. Naturally this species is of a rather straggling habit, and will therefore require a little extra attention in the matter of stopping side shoots, &c. Leaves opposite, nearly 2 inches in length, somewhat oblong acuminate, full green above, paler below, slightly tinged with dull purple. Flowers in pairs; base of tube white, upper part large and spreading, limb five-lobed, lobes slightly crisp, purplish-lilac, more or less streaked with lines of a deeper hue.



FIG. 19.—DIPTERACANTHUS SPECTABILIS.

EMPLOYERS AND THEIR GARDENERS.

AS regards exhibiting, and whether the employer or the employed should be named as taking the prizes, your pages have contained some remarks from both sides. It is a large subject, far larger than it seems at first sight. My son has a horse of his own; riding up the town one of my friends overheard two lads talking. One says to the other, "That be his own hoss, but he do keep it in Mr. Snooks' stable." (Snooks is the *nom de plume* of my man). If I address a label or letter to myself

I address it plainly, adding neither Mr. nor Esq. "Phantom" seems very anxious about the "Mr.," but I have heard servants talk of "Mr. Rose over at Johnson's," Mr. Rose being the gardener and Johnson the principal person in the town. I have in days gone by often seen my name without prefix or addition in a prize list, and been very glad so to see it too.

I can fully understand that a gardener may, under certain conditions, feel that he has a right to call the plants, say Chrysanthemums, his own. I can understand a gentleman saying to his gardener, "Make the best of the houses, fill them with any flowers you please at your own expense, find the manure, &c., &c. In return, supply me in the house, exhibit if you please at your own expense, and of course take the prize money." This gardener has a claim to call these plants and the blooms shown his own. I am presuming that the gardener takes a real interest in his work. But supposing plants, manures, show expenses, paid by the employer, what claim can the gardener have to be considered the owner? And if the employer's name be left out whom do the public suppose to be the owner?

Again, I can understand a nobleman saying, "I give you such a salary, have what you think best in the houses. I expect whatever fruit I require to be forthcoming, and if you have not got it you must provide it." Such a gardener might possibly have the right to give away fruit as he pleased, seeing he would have to provide it if not there; but in the absence of permission he has no right to give away anything that is not his own.

I do not see that "Phantom's" rather strained comments on the Duke of Ramsgate or the Marquis of Willerford exhibiting help the matter, though it is quite possible that their lordships might, if fond of gardening, do some of the things for which "Phantom" in a rather curious way gives them credit. The brains that grow the flowers have by their contract with the master, whether lord or otherwise, given themselves up to the master for that purpose, and should, as it seems to me, be proud to see the owner's name attached to silver cup or first prize. Everyone who knows anything about it gives the gardener the credit. I should not in the slightest degree mind attaching my usual *nom de plume*, well known to your readers for many years, but as I have been obliged to speak of myself somewhat egotistically let me subscribe myself plain—JOHN HOBGOBLIN.

[Nothing is more annoying to gardeners as a rule, and we know of no exception, than to see the owners of the produce staged ignored on prize cards at exhibitions. The fault of omitting owners' names, and it is a fault, rests with the show authorities; nor are gardeners responsible for reports in the press.]

EARLY FLOWERS.

ALREADY the gentle drooping Snowdrop is showing its buds of white. Here and there odd flowers of the Primrose and its near of kin, the Polyanthus, are seen. The true old Christmas Roses are flowering, and Hepaticas will soon be open. We have sheets of Christmas Roses—that's the way to let them show us their beauty, not in single clumps, but in long borders, or in masses solely of themselves. Then will come sweet Violets in plenty, and there are none so sweet or so early as the old common sort, and next to that I think the Czar for usefulness. Along with these, sheltered at the foot of walls, the Neapolitan, De Brazza, and Marie Louise yield a few fine blooms, the latter the earliest and sweetest. Hepaticas and Snowdrops, yellow Crocuses and white Arabis, the satin-flowered white and purple Sisyrinchiums, various of the Helleborus tribe, and clumps of the little Daffodil, Forget-me-nots, and Aubrietias, masses of Winter Aconites with tender shoots of many flowers.

This month also, if we are wise, we shall have in greenhouse and sitting-room plants of Primroses and Polyanthuses lifted from outside and allowed to open their flowers under a little kindly shelter. Just at the time we write we lift many clumps of various Daffodils, the early Squill, Lily of the Valley, Solomon's Seal, Dielytras, Glory of the Snow, and other spring flowers. They are placed in pots under glass, and during the early and latter days of the month nothing gives greater pleasure than these. Crocuses potted in autumn and kept growing cool are in the beginning of February not only pretty, but very beautiful, and of much value. Of other hardy flowers not so common, but happily becoming better known every day, we ought to have some Azaleas, both mollis and the Ghent varieties. They merely require potting, and when summer weather comes may be turned out of doors again. Treated in the same way we may have the beautiful Spiræa palmata, good Rhododendrons, and that very sweet shrub Choisya ternata, and, indeed, were we less fond of running after merely the more "fashionable" flowers we might have very much more interesting and quite as attractive gardens. I am going to say nothing about Cinerarias, Hyacinths, Chinese Primulas, Azaleas, &c. They are in everybody's gardens, but I do think, now that many of the best Orchids are so cheap, as witness Dendrobium Wardianum, Odontoglossum Rossii, and others, that we ought to see more of these in everyday gardens. Anybody with a vinery can grow the former. A cold frame and greenhouse will suit the latter. Others which are easily had in flower during this month are Dendrobium Pierardi, a very pretty sort, and the old D. nobile. Then we have that lovely flower Cœlogyne cristata, also of the easiest culture. Lycaste Skinneri, Lælia anceps, which, if grown cool, flowers at this time. The whole of these Orchids succeed with the exception of Lycaste Skinneri, which I have not so tried, fastened to and rooted on pieces of Fern stems.

Yet another February flower I should like to say a word for—Clematis indivisa. If there is any place where this can ramble unchecked during this month it will be a perfect veil of white starry blossoms with just the faintest bit of pink diffused from its anthers. These notes are only meant to indicate some of the good things, all easily grown, all most beautiful, appropriate to those who may have the means of procuring anything grander, and who may yet wish, and rightly wish, for something to beautify their gardens, their lawns, their rooms, and their greenhouse.—B.

THE WILTS HORTICULTURAL SOCIETY.

THE annual meeting of the Wilts Horticultural Society was held in the Council Chamber, Salisbury, on the afternoon of the 8th inst., the ex-Mayor (Mr. Fred. Griffin) presiding. The Hon. Secretary (Mr. Walter H. Williams) read the report of the Society's financial position during the past year, which was considered by the subscribers and Committee as satisfactory. The Earl of Radnor was re-elected as President of the Society, and Lord Heytesbury, Sir Michael Hicks Beach, Bart., W. H. Gramshaw, Esq., Hurdcott House; H. Stevens, Esq., and — Alexander, Esq., were elected as Vice-Presidents for the present year. Mr. D. H. Williams was, on the proposition of Captain Marryat and seconded by the Chairman, re-elected Hon. Secretary. Subsequently a hearty vote of thanks, proposed by the Chairman, was accorded to Mr. Williams for the valuable services which he rendered to the Society during the past as in previous years. The annual dinner was held in the evening in the banqueting hall of the Council Chamber, when over a hundred gentlemen and gardeners were present, presided over by the Mayor (E. Waters, Esq.,) and ex-Mayor of Salisbury, supported by the Rev. C. N. Wyld, Rev. E. Hassan, Alderman Brown, the Town Clerk, &c. The usual patriotic toasts having been duly honoured, the Mayor gave the toast of the evening "The Wilts Horticultural Society and the Hon. Secretary." He referred in flattering language to the business-like manner in which Mr. Williams managed the affairs of the Society. The Honorary Secretary responded in a suitable and practical speech. The ex-Mayor—submitting the toast of the President of the Wilts Horticultural Society, the Earl of Radnor—remarked that it was fortunate that gentlemen who had the means should take such an interest as his Lordship did in the culture of fruits, flowers, &c. Mr. Ward, whose name was coupled with the toast, responded. The toast of the exhibitors, proposed by C. Moody, Esq., J.P., was suitably responded to by C. W. Gater, Esq., and Mr. John Horsefield, gardener to Lord Heytesbury, Heytesbury, who suggested that for about six months in every year, say from October to March, the Society should have monthly meetings, at which papers on horticulture could be read, followed by a discussion. The toast of "The Judges," proposed by Captain Marryat, was acknowledged by Messrs. Ward and C. Warden (Clarendon Park). Before the meeting was brought to a close it was suggested by Mr. Garland that in the event of Mr. Horsefield's suggestion being carried out, that Mr. Ward be asked to read a paper on Vine culture. This Mr. Ward promised to do when the time came.

ANCIENT SOCIETY OF YORK FLORISTS.

MR. T. E. ABBEY presided at the annual meeting of the members of the above Society at the "White Swan Inn," Goodramgate, recently.

The annual report, read by Mr. J. Lazenby, the Secretary, stated that the very satisfactory position the Society had attained at the close of 1886 as regarded its business matters was still maintained at the end of last year, 1887. The subscriptions for the past twelve months from members had reached £106, or an increase equivalent to thirty new members. The various shows, held as usual in the Guildhall, had in the past season been accorded a very much increased attendance of visitors, and it could not be doubted that great good must have resulted from an horticultural point of view. The number of competitors had also increased, although in a pecuniary sense exhibitors had not benefited to any great extent, as the increased vote brought out upwards of forty competitors, amongst whom 1420 prizes were awarded. The Chrysanthemum Show again resulted in a great success, for financially the receipts at the door showed an increase each day over the preceding years. The gross receipts were upwards of £200. The special prizes offered by the ex-Lord Mayor (Sir Joseph Terry), the ex-City Sheriff (Mr. Alderman Wright), the Stewards, and Messrs. Backhouse & Son, Mr. Deverell, Mr. Morton, and Messrs. Wood & Son, constituted a feature of considerable attraction, and some recognition was due to those gentlemen for the interest so practically manifested by them in the success of the Exhibition. The general condition of the Society was most encouraging, and several recommendations for the shows of this year from the present Committee would be brought before the annual meeting, and from past experience were considered essential towards promoting the usefulness and success of the Society in the future.

The financial statement showed that there was a balance in hand at

the beginning of last year of £106 4s. 3½d. The annual subscriptions and donations amounted to £106 ; receipts of the three days of the Chrysanthemum Show, £179 11s. 4d.. and including some other items of income the total was £415 18s. 2d. The expenditure, including award of prizes, printing, advertising, music, judges' allowance, Secretary's salary, &c., amounted to £266 17s. 1d., leaving a balance available of £149 1s. 1d., being the largest sum the Society had ever had at disposal at the close of any season. On the motion of Mr. G. Cowper, seconded by Mr. W. Robinson, the report and balance sheet were adopted.

The officers were elected as follows :—President, His Grace the Archbishop of York ; senior Vice-President, the Lord Mayor (Mr. Ald. J. Sykes Rymer) ; Vice-Presidents, the City Sheriff (Mr. S. Border), and Mr. G. Cowper ; Stewards, Mr. G. Lamb, and Mr. T. Horsley ; junior Steward, Mr. W. C. Milburn ; Treasurer, Mr. J. Fielden. Mr. T. Coulson moved and Mr. Folkard seconded that Mr. J. Pilmoor be appointed Secretary. Mr. J. Lazenby having intimated that he had not resigned, Mr. J. E. Wilkinson proposed the re-election of that gentleman. Mr. Hardeastle seconded the proposition. In the course of the discussion which followed, it was shown that Mr. Lazenby, since his appointment as Secretary nine years ago, had satisfactorily attended to his duties, and that whereas in the early portion of the Society's career they had only a membership of thirty or forty, with scarcely any cash in hand, there were now upwards of 400 members, and a balance of £149 in hand. Mr. Lazenby held that he had always faithfully performed his duties, and said that if re-elected he should continue to do his best for the welfare of the Society. Mr. Pilmoor's name was then withdrawn, and Mr. Lazenby was unanimously appointed Secretary.

The following gentlemen were chosen as the Committee :—Messrs. Folkard, Key, Moore, Pilmoor, Rodwell, Robinson, Simpson, Smith, Fieldhouse, Douglas, Hudson, and Richardson. Mr. Manton and Mr. G. Pilmoor were elected Auditors. An alteration in Rule 8 was made ; the annual meeting to be held on the second Tuesday in January, instead of the first Tuesday in February.

Votes of thanks were passed to the donors of special prizes and to the officers of the Society, and the meeting made a grant of £100 for the Chrysanthemum Show of 1888, and £40 for the series of periodical exhibitions held in the Guildhall.

GROWING DAFFODILS IN POTS.

Like the Rev. Mr. Englehart I agree with your correspondent, Mr. J. A. Calthorpe, that Daffodils are not nearly so much grown in pots as they should be for blooming during January and February. They should be forced to have them sooner than January, and, except the Tenby Daffodil and in a less degree N. Princeps, they force badly. Besides with a profusion of Chrysanthemums in December they are not required then, neither are they required after mid-February, except in special cases for house or conservatory decoration, as in the south of England and Ireland they commence flowering then in the open air. I have numbers of them either expanded or preparing to do so. If pot culture of Daffodils is to be extended, I would suggest that it should be with the sweet-scented ones. I do not mean a mere perceptible scent, but such as is obtained from N. Tazetta Grand Monarque or N. Tazetta Her Majesty. The true varieties of these can only be had from respectable firms. Perhaps Mr. Burbidge might tell us more of fragrant Narcissi for pot culture.

The size of the pots cannot be fixed for general purposes, as Mr. Calthorpe seems to convey, for the pot that will suit N. Bulbocodium, say to flower and grow in, would hardly hold the bulb of the "large Welshman," N. B. Sir Watkin, Horsefieldi, Emperor, or Empress. Many of the Tazetta section are equally as large. There is this supposition to explain this reference to "3 or 4-inch pots." Either the bulbs were lifted out of the ground for the mere flowering one season, or they were principally small varieties like N. nanus or N. minor, or say N. poeticus. I never give those named of the Bicolor section less than an 8-inch pot, as I take care of them for the following season. Many are difficult to procure true to name, and large flowering bulbs of some exceed 1 lb. per dozen, and if for no other reason should have fair play.

I fully agree with the Rev. Mr. Englehart, after many years' experience, that light has nothing to do with the failure of the bulbs to flower. Undue forcing may help to produce it, where the embryo flower inside is only partially developed ; but a main cause in my experience is where the Dutch growers send out "offsets" or side bulbs that should have had an additional year to mature florally. This they always do when the demand is considerable, as, for instance, for N. Leda, after the Daffodil Conference.—W. J. Murphy, *Clonmel.*

Your correspondent, "J. H. E.," page 112, seems to think that I attribute the fact of my Daffodils going blind to a wrong cause ; but to confirm what I previously stated I may say that I took six pots out of the ashes the same as the others, these were placed into a warm pit, and pot shaded. Strange as it may appear, only four flowers appeared on the eighteen bulbs, while of those in a cold frame and shaded 90 per cent. have flowered. As to the bulbs not having room to develope, I send you two double flowers taken from a 4-inch pot with three bulbs in it, so that you may see they are of good substance, and the colour can scarcely be equalled in any other flowers. Standing between the winter flowering Pelargoniums they give the whole house a charming appearance.—John A. Calthorpe, *Summerville, Dunmore East, Waterford.*

[The flowers sent were of good size and bright in colour.]



SHOWING—OWNERS' CLAIMS.

I have felt very much flattered by the attentions of Mr. Raillem. When I ventured to indulge in a little quiet humour the other week I did not think I should attract such serious attention from Mr. Raillem, and I hope he will forgive me. I feel that I deserve a rebuke for such levity, but I will try not to do it again, and I hope "Wraith" will not be so provokingly mirthsome.—Phantom.

RIPENED WOOD.

Few incurved varieties came up to the usual standard of perfection last season. This must be very disappointing to the advocates of thoroughly ripened wood as necessary to the production of blooms of the finest quality. Long ago in these pages I repudiated this theory, but at that time the prevailing testimony was against me. The past summer has been all that could be desired for the thorough maturation of the wood of these plants, and if the result had been blooms of exceptional quality throughout, we must have accepted the theory as a correct one. It may be said the spring was a late and cold one, but this will scarcely hold good, for it is only a poor pretext upon which the ripened wood theory can be maintained. We have had springs as late and cold, if not worse, and summers and autumns that have been sadly deplored, and yet the incurved blooms of Chrysanthemums have been superior to what they have been this year. On the whole the plants had not such a hard struggle early in the season as they had the previous year, and yet the blooms generally were then better than they were last autumn. While a certain amount of firmness in the wood is unquestionably necessary for the plants to produce good flowers that possess brightness, depth, and solidity, it can be over-ripened and thus prove detrimental to the size of the flowers generally. If I have observed rightly, those plants that have produced the best flowers this year have been particularly strong, taking them all through, and therefore less likely to be over-matured. The consequence is that these growers have shown better blooms than the majority of other competitors. This year I have seen no better blooms than those from Wyncote and Impney. The plants at the former were strong, kept their foliage to the base, and presented a less ripened appearance than we should have expected to find. Those that showed unmistakeably their ripened condition by the foliage did not produce blooms good enough for showing. Three that I especially noticed were Refulgence, Nil Desperandum, and Prince Alfred. I think only one bloom of the former was staged, none of the second, and the latter, with the exception of one bloom, was inferior to those staged by Mr. Mease in past years. I have not seen the Impney plants, but from what I have heard they are exceptionally strong—just the plants I should say in a season like the past for producing good blooms. Stands that have been shown from plants that were less strong and evidently more ripened have been smaller in size, taking them throughout, but even, and possessing greater solidity than those staged from the two gardens I have referred to. A little perplexing, perhaps, was the condition of the plants from which Mr. J. P. Leadbetter cut the blooms he staged at Hull in the open class. It was generally said that the stems of the plants were no thicker than a lead pencil. This was confirmed by the plants in his first prize group of Chrysanthemums arranged for effect. The plants were conspicuous for their weakness in comparison to what we are in the habit of seeing, and yet many of the blooms were of sufficient quality to have been shown in a cut state.

The southern growers are noted for their blooms being brighter in colour and possessing greater solidity than those grown in the north. The latter may be due to a more thoroughly ripened condition of the wood, while the former is due principally to a lighter atmosphere. They do not, as a rule, however, grow them so large or develope the same width in the florets. There is unquestionably a reason for this, and it is worth discussion. I think this may be traced to thoroughly ripened wood. The drier atmosphere of the south may, even against the cultivators' will, bring about this condition. It cannot be disputed that a plant thrives best at a certain temperature, and it may be that the south is too hot and dry at times for these plants, and therefore the growth is practically brought to a standstill. The wood may be too thoroughly matured for the plant to produce good blooms, for the cells must become filled with matter that cannot be dissolved, and the plants do not take up by their roots the nutriment requisite for the proper development of the blooms. The flower may for a time after the roots cease actively draw supplies from the upper leaves and portion of the stem. Under such conditions width of floret and large blooms cannot be expected. The wood may and should be matured, but not too much so to prevent activity at the roots and the various processes in the leaf and stem carrying out their proper functions until the blooms are fully developed.

Those who wish to attain success must not place too much trust in the ripened condition of the wood, for they may, and will, assuredly be deceived. The object to be attained is hard fine wood, but not so ripe as to bring the plant to a standstill. The roots must be kept thoroughly active to the last, and the broad florets and large blooms produced about

Liverpool is mainly due to top-dressing and keeping the roots in full activity, so that they can take up what nourishment the cultivator feels disposed to give them. Healthy foliage down to the base and active roots insure large flowers with depth and breadth of floret. Last season was just a little too warm, and ripened the wood too much even about Liverpool. When the blooms were developing at Wyncote the roots were like hundreds of small tiny worms in the top-dressing. Plants that are too ripe never root into these top-dressings, even if they are applied, and if such plants are turned out when the flowers are half-developed, it will be found that they have practically ceased to work.

Over-feeding, or stimulants too strong in their latter stages, will bring about similar conditions as takes place when the wood is too ripe. The roots are poisoned and brought to a standstill: supplies are cut off, and the flowers only develope under difficulties. I have seen the hopes and prospects of more than one grower blighted by this cause just in the last stages. Under-feeding is safer than over-feeding, but if the roots can be kept in full swing, and feeding carefully and judiciously practised to the last, fine flowers are almost certain to be the result, provided the plants are strong enough and the buds have been taken at the right time.—W. B.

THE CHRYSANTHEMUM.

[THE following essay has been adjudged the best in the competition for the prize given by Mr. E. Kay, Holbeek Moor Pottery, Leeds, open to under gardeners residing in the West Riding of York. It was sent in by Mr. Geo. Anderson, The Gardens, Ferniehurst, Shipley, and was read by him at a recent meeting of the Leeds Paxton Society.]

After some introductory remarks respecting the history of the Chrysanthemum the culture is thus described:—

PROPAGATION.

The usual method of propagating is by cuttings; those intended for large-flowered specimens should be struck in December under handlights near the glass in a house with a temperature of from 40° to 50°. Some growers prefer to strike in heat in February and March; this is not advisable for two or three reasons. The early suckers become drawn and weakly before they are wanted for cuttings, and the time for the proper development of the plant is considerably shortened, and although growth is slow at the turn of the year, the advantage of having stocky plants in 3-inch pots against cuttings to be rooted in February is obvious. Not that striking at the latter date is to be condemned, as many varieties that are tardy in throwing up suckers in the autumn may then be struck and make plants producing flowers to be by no means despised. Another reason for early rooting is to have the old plants cleared off in good time.

Striking Cuttings.—At whatever time they are struck select from the base of the plant cuttings about 3 inches long, a medium between the weakly and the thick sappy ones being the best. Avoid stem cuttings, as they are liable to set flower buds early in the summer to the exclusion of shoots, and thus have blooms of very inferior quality many weeks before they are required. Side shoots of scarce varieties may, however, be struck in May and June with the object of making plants to propagate from the following season.

Suckers.—Rooted suckers may be taken with every prospect of doing as well as cuttings, the only objection to them being in the case of scarce varieties, for it is obvious that when cut off at the surface it may break below and produce more cuttings, which possibility is precluded when lifted with a root. It is preferable to strike the cuttings singly in thumb pots, the best soil for the purpose being equal parts loam and leaf mould with a free use of silver sand; sprinkle a little of the latter on the surface after filling the pot, and make the soil firm round them.

Treatment of the Cuttings.—After insertion the cuttings should be watered with a fine rose and placed on a bed of ashes under handlights as above described, and kept close until roots are formed, with the exception of an hour or so in the morning to evaporate excessive moisture and give what water is required. When two or more cuttings are struck in the same pot—3 or 4-inch sizes are the best for this purpose—repot them before the roots are entangled, thus reducing the check they receive, and keep them in the same conditions as when striking until they have hold of the fresh soil, when air may be admitted more freely until they have all the light and air possible, subject, of course, to modification according to the weather. The best structure for the purpose is a low house provided with hot-water pipes, as they are less liable to be affected by damp and mildew than when in a frame, not to mention the better facilities afforded for protection from frost.

Damp and Mildew.—Damp and mildew are the greatest enemies of the Chrysanthemum at this period, and as the former is the precursor of the latter, keeping the plants airy and carefully attending to their watering will tend to check it. Should mildew appear, the affected parts should immediately be dusted with flowers of sulphur.

POTTING.

When the pots are well filled with roots it must be decided in what size they are to bloom, and be repotted accordingly before they are root-bound. Plants to be potted finally into 9-inch pots should first be placed into 3½-inch, next into 5 or 6-inch, and from that into 9-inch pots. Plants to be grown in 10-inch pots must have a size larger than those mentioned at each potting. The soil for this potting should consist of two parts fibry loam to one of leaf mould and one of spent Mushroom bed with a liberal addition of sharp sand and charcoal, the latter especially if the soil is heavy. Use clean pots well drained, and pot firmly, afterwards returning them to their former or a similar situation until the roots reach the sides of the pots, when they may be removed to a cold frame standing on ashes close to the glass. Keep them close for a few days, after which admit air freely to keep the plants stocky. Immediately after potting and also after removal be specially careful not to overwater them.

First Break.—While the plants are in the pots named they will make their first break about the end of May, caused by the formation of a flower bud at the apex of the stem, which induces side shoots to break out at the nodes. The bud should be removed and the shoots reduced to the required number, the latter to be decided by the purposes for which the plants are intended; if for flowers of the largest size three stems will be ample and the three topmost buds must be left, if for flowers of secondary size six or eight may be left.

Final Potting.—By the first or second week in June, if all has gone well with the plants, they will be ready for their final potting, which should be done before they are rootbound, and done properly, or the chances of success are decidedly minimised. One essential is good soil, but it is equally important to have a soil capable of taking in a quantity of food in addition to what it contains, also to be capable of passing the water quickly through it. The best mixture for the purpose is loam, with the addition of a portion of spent Mushroom bed, a little leaf mould, crushed bones, or horn shavings, coarse silver sand, charcoal, and wood ashes, but no hard-and-fast rule can be laid down for the quantity and proportion of each ingredient to be used. What the cultivator must aim at is to have a good bodied mixture rather light than otherwise; not too wet, or it will run together and retain water too long, and not too dry or the plants cannot be potted properly. Use clean pots with 2 or 3 inches of drainage surfaced with moss or rough leaves and pot firmly. Too much importance cannot be attached to firm potting, for if potted loosely they are likely to develope large leaves on soft sappy stems from which it is impossible to get good substantial flowers. Pot sufficiently deep to cover the surface of the ball, and stand them on a cool base in their summer quarters.

(To be continued.)



HARDY FRUIT GARDEN.

BIRDS AND FRUIT BUDS.—Already the bullfinches have commenced destroying the fruit buds, Plums and Damsons being the first to suffer. Gooseberries, Pears, Apricots, Peaches, and Apples all will be visited in their turn unless something is done to stop the birds. There is a good promise of bloom on all kinds of fruits, but in many districts so unusually numerous are the bullfinches that these bold marauders may soon spoil it all, and that, too, without perhaps being noticed. The surest and quickest way of clearing a neighbourhood of these beautiful pests is to trap them. Double trap cages with a live hen bird of the same species in a lower division and a little Turnip or bird seed in the top will attract and catch all the male birds and most of the hens in the district, two or three being sometimes caught in the same day. They are also very fond of the seed on Weeping Ash trees, as many as fifteen birds having been seen on a tree at one time. The gun has altered this somewhat, and what the trap misses will also be shot, at least whenever this can be done without injury to fruit trees. A reckless use of the gun in a fruit garden must be guarded against, the shots proving most injurious to the trees. Sentiment ought not to stand in the way in this matter of destroying garden pests, as it simply means either death to the bullfinches, netting over the trees, or little or no fruit.

PRUNING APRICOT TREES.—A few warm days will bring these rapidly forward, and if not already pruned and nailed, this work ought to be completed. Where they are fruited principally on the spurs formed to summer stopping the laterals, not much pruning beyond reducing the length of these spurs is needed. Supposing the young growths stand out about 4 inches from the stems they should be cleanly shortened to a length of 2 inches, or otherwise unsightly old spurs will be gradually created. When spurs thus become unduly long these lose much of the benefit to be derived from a warm wall, and do not produce such luscious fruit as do those better situated. It is not advisable to clear off these long spurs wholesale, or one season's crop may be lost. Be content rather to thin them out, or gradually get rid of them. If cleanly sawn or cut off near their starting point next season may see a cluster of young growth around these short stumps, and which may be converted into good fruiting spurs. If preferred the long spurs may be gradually shortened, each time to a good back growth.

FRUIT FORCING.

PEACHES AND NECTARINES.—*Earliest Forced House.*—The trees must be syringed every morning and afternoon in order to keep red spider in check. If, however, the weather be dull the syringing must be practised early in the afternoon, so that the trees may become fairly

dry before night, or if that does not take place the afternoon syringing must be dispensed with, damping the paths and borders instead, as keeping the trees dripping with water through the night causes weak growth and thin foliage. See that the outside border is well protected from the cold, and water the inside border with liquid manure, which will much assist the fruit in swelling, especially in the case of weakly trees long subjected to repeated forcing. Vigorous trees will not require any stimulants, excessive vigour being unfavourable to the fruit safely passing the stoning process. When the fruit is the size of small marbles thinning may be commenced, but remove a few fruits only at a time, first removing those that are badly placed. Disbudding must be followed up, taking care to leave a growth at the base of each bearing shoot, and another at its extremity, or at least level with the fruit. The shoots retained for attracting the sap to and supporting the fruit should be stopped at the second or third leaf, but the basal shoots must be trained to take the place of those now bearing fruit. Shoots upon extensions must be left at 12 to 15 inches distance apart to form the bearing shoots of the future. It is a great mistake to crowd the trees with growths for which there is not space to allow of its full exposure to light and air, therefore avoid overcrowding, seeking to maintain an equal balance of growth throughout the trees and its solidification by judicious ventilation.

Second Early House.—Continue fertilising the flowers gently, distributing the pollen by shaking the trellis or drawing over each flower a camel's hair brush or other means of distributing the pollen. Lose no opportunity of admitting air, avoiding, however, cold currents, and leave a little ventilation constantly at the apex. The night temperature may be continued at 50°, 5° less on cold nights, 55° by day artificially, and 60° to 65° from sun heat, not allowing a rise above 65° without a free circulation of air.

Houses Started Early in February.—The trees started early in the month are swelling their flower buds rapidly. Syringing must cease when they show colour. Maintain, however, a good moisture by damping paths and borders two or three times a day as the weather may dictate, avoiding a close, stagnant atmosphere. If the flowers are very numerous, thin them by rubbing the hand downwards on the under side of the shoots, which will strengthen the remainder, enabling them to set better. Examine the trees closely, and if there be any aphides fumigate with tobacco, so as to destroy them before the flowers expand. Continue the temperature at 40° to 45° at night, and 50° by day, above which ventilate freely. When the flowers expand raise the temperature to 50° at night, 55° by day, and 60° to 65° from sun heat with free ventilation. On cold nights the temperature may fall to 45°, or even less; also 50° by day, allowing a little ventilation constantly at the top of the house.

MELONS.—The weather lately has not been favourable to the growth of the young plants. In a Melon house, a ridge the whole length of the bed, about 2 feet wide at the base, with the top flattened so as to give a depth of 10 to 12 inches, is preferable to hillocks, the soil being made rather firm, and when warm the plants may be turned out, firming the soil well, and raising it to within half an inch of the seed leaves. The plants may be placed 2 to 2½ feet apart, the leading or primary shoots being taken up without stopping until fully two-thirds the distance they are intended to travel is reached, then pinch out the point of each. When three or four lateral joints are made the points should be taken out. Some varieties will show fruit freely on the first laterals, and as early Melons are a consideration, let them remain, taking out the point at a joint above them. To allow all the laterals to remain would very much overcrowd the foliage, therefore rub off every alternate one whilst they are quite young. After stopping the first laterals, the succeeding growths will show fruit at the second or third joint. The growths should be trained thinly and regularly, so that every part of the surface is evenly clothed with foliage and fruit. The plants will require but little water as yet, nevertheless maintain the soil in a moist state, avoiding anything approaching to saturation. Sprinkle every available surface in the morning of bright days, and again at closing time or early in the afternoon. Ventilate carefully, avoiding currents of cold air. Some hexagon netting or scrim canvas placed over the ventilators will break the force of cutting winds. Maintain the night temperature at 70°, falling to 65° in the morning, 5° less in severe weather being better than seeking to maintain the higher temperature by sharp firing; 75° by day, rising to 80° or 85° from sun heat; bottom heat kept steady at 80°.

In pits and frames with the shoots trained over the surface of the beds, the plants, being stopped at the second leaf, will produce two shoots, and these in turn being stopped will result in four shoots, two being taken to the front and two to the back of the frame. Besides these a number of shoots will appear near the collar of the plant; these should be rubbed off whilst quite young, and do not encourage any lateral nearer the stem than 6 inches. This will keep the collar clear. Stop the principal shoots when within a foot of the sides of the pit or frame, and thus throw vigour into the laterals, which will show fruit at the second or third joint, stopping them at one joint beyond the fruit. Cover the lights with double mats at night, and see that linings are regularly attended to, renewing the old linings as required. Prepare material for making up fresh beds. About a fortnight before it is desired to make up the bed the dung and leaves should be thoroughly incorporated. In a few days it will be seen whether there is sufficient moisture to produce decomposition, fermentation being the result; if not turn the whole, sprinkling with water, so as to moisten the mass, and when in good heat turn again outside to inside and *vice versâ*, two or three turnings being required at intervals of about four days. The bottom heat of fermenting beds should be 85° to 90°.

Shift later sown plants into large pots, or add soil as the plants advance, stopping those for frames at the second leaf, not stopping those for trellises, but placing a small stick to each for support.

CUCUMBERS.—Examine the plants in bearing once or twice a week, removing bad leaves and exhausted growths, thinning the shoots, stopping, and removing old and deformed fruits. Thin the shoots if necessary, overcropping and overcrowding being highly prejudicial. In securing the young shoots to the trellis do not tie them too tightly, but allow room for development. Plants that have been in bearing for some time should have the surface soil removed and have previously warmed fresh soil added. Turfy loam with a fourth of well decayed manure will answer; we, however, prefer for Cucumbers and Melons turfy loam without an admixture of manure, seeking vigour by rich surface dressings or liquid manure. The bottom heat should not be allowed to fall below 75° or exceed 90°, 80° being suitable, the night temperature 65° to 70°, 5° less in severe weather, 70° to 75° by day, rising to 85° from sun, closing early in the afternoon, damping the pathways on bright mornings and at closing time.

For young plants hillocks or ridges should be formed as described for Melons. Afford the same temperature as advised for older plants. If the sun be powerful and the plants show indications of flagging shade them for a few days. Attend to dung-heated frames with linings as required, protecting at night as advised for Melons. Do not apply more water than to keep the plants gently growing. Where red spider has appeared on the winter fruiting plants coat the pipes with sulphur and lime in equal parts, heating the pipes to as near boiling point as possible for a couple of hours on a calm evening, taking care that the temperature of the house is not more than 80° to 85°, and then allow the pipes and house to cool down to their regular temperature. The foliage should be thoroughly dry. The same process may be repeated the following evening, and is generally effectual, the mixture being applied whilst the pipes are hot.

STRAWBERRIES IN POTS.—A fair set characterises the first plants. Remove all badly set or deformed fruits, leaving from four to half a dozen of the most promising fruits to each plant, and aid their swelling by liquid manure. The temperature should be 60° to 65°, advancing to 75° by day with moderate ventilation. Avoid drying currents of air, as they injuriously affect the swelling of the fruit. Examine the plants twice each day, giving water only to those needing it, and in sufficient quantity to show at the drainage. See that succession plants are kept free from aphides, fumigating if necessary before the flowers open. British Queen and other late sorts may now be started, introducing, however, proportionate quantities of Sir Harry, Sir Joseph Paxton, President, James Veitch, &c., to maintain the succession.

PLANT HOUSES.

Azaleas.—As these plants cease flowering remove all the seed pods and wash the plants if any trace of thrips can be found upon them. A good solution for this purpose is tobacco water reduced to the colour of stout; in each gallon of this dissolve 1 oz. of softsoap and a piece of common washing soda about the size of a Cob Nut. This solution will not only destroy living insects, but their eggs as well. Place them afterwards where they can enjoy gentle heat and moisture until they have made their growth. The conditions of a Peach house or vinery at work, where the night temperature does not exceed 55°, will suit them well. Directly their roots commence activity those that need repotting may be attended to, while the remainder may have a little artificial manure applied to the surface of the soil. In repotting be careful not to disturb the roots further than is necessary in the removal of the old drainage. The soil, consisting of good peat and sand, must be pressed in the pots firmly. Syringe the plants and pots freely afterwards, but no water at the roots will be needed for some days if the soil was in a satisfactory state of moisture when they were potted.

Camellias.—Plants that have flowered should be pushed into growth at once if they are required to flower as early as possible next autumn. Undue forcing at that period of the year is certain to end in failure. No matter how carefully forcing operations are conducted the buds will invariably fall. The necessary forcing can be done now by inducing the plants to make an early growth, so that they will unfold their flowers almost naturally, or with the least possible difference in temperature at the time they are required. If the plants are infested with scale syringe them liberally with petroleum and water, using 3 ozs. of the oil in each four gallons of water. If no signs of new growths are visible upon the plants 4 ozs. may be safely used. Place the plants afterwards in a temperature of 50° to 55°, with a rise from sun heat during the day. The house should be kept closed, and the plants heavily syringed twice during the day. If they need repotting do so at once, using a compost of good fibry loam, one-seventh of horse manure, and a liberal quantity of coarse sand; a little charcoal and half-inch bones may also be added if the plants are large. About a 10-inch potful of the former and an 8-inch potful of the latter will be ample to each barrowful of soil. If top-dressing only is needed use equal portions of loam and manure.

Greenhouse Rhododendrons.—R. Gibsoni, Princess Alice, Princess Royal, and others, will bear gentle forcing if their flowers are appreciated moderately early in the season. Strong heat is most injurious to these plants, and if applied in the hope of inducing them to open their flowers, they will, in the majority of cases, fail to do so. They must not

be subjected to a higher temperature than 50°. Avoid placing them on a dry stage, and syringe them freely while in the forcing house.

THE BEE-KEEPER.

BEES WEARING OUT AT THE HEATHER.

"A. L. B. K.," page 94, places this matter in quite a different light from what I understood him to mean. I have never seen the number of dead bees inside the hives at the Heather as he describes, nor anything similar. The only case in which I have seen a quantity of dead bees in a hive—that had neither been starved nor suffocated—was one winter, in one of Abbott's copyable hives; frames across the entrance, sides double walled, front single walled. In this hive I found a full seam of dead bees, and the queen—an imported Cyprian—between the front comb and the hive wall. The hive stood exposed, and I concluded these bees had been chilled to death, as there was plenty of food, and the seams between the other frames were well filled with healthy bees. Probably the same cause may have had to do with the death of those mentioned by our friend.

ODOURLESS FOUL BROOD.

I am very much obliged to "A. L. B. K." for the information he gives, in which he proves my system of curing this disease is practically like the one he has taught and practised long ago, though I think my mode is much less trouble. However, it seems very strange the "authorities" have never practised or recommended it; others have stamped the disease out. Down here in Hallamshire, when one is praising himself, his ways, systems, &c., as being the only true and correct way, and deriding those of others, we simply describe him as "a man who likes to hear himself talk." Do not the various teachers of apiculture resemble the showmen in a fair, each one doing his best to make the greatest noise?

After all I have said and written on the subject, the editor of the *Bee-keepers' Record* says it is the true foul brood, though Mr. Cheshire was positive in 1885 that it was not. He also says my system of curing it "is the well-known starving process," though, be it noted, the bees have their full liberty and are fed, if no honey is to be had; "that it is a costly process," though it is the cheapest of any, and does not involve the expenditure of a penny either for physic or appliances; and as to its throwing back the stock to the position of a weak swarm, the value of this contention may be judged when I repeat that I have twice cured a diseased stock in one summer, and yet had a splendid stock to go into winter quarters, while the best stock last spring in this district was one that was built up from a teacupful of bees in August, with no help beyond feeding. These were Punic bees, that with their queen were diseased in the spring. I have previously stated these facts, so there is no excuse for ignoring them. As a matter of fact, a handful of bees in a clean hive have 100 chances to one against a bucketful in a hive of diseased bees.

In the same journal I have referred to, the editor of the *American Bee Journal* is quoted on the subject as follows:—"If the larva is elastic and ropy it is a sure indication of foul brood. This is a sure test, but the odour is not to be relied upon."

Now the disease I have had so many years' experience with is neither "ropy" nor "elastic" in its early stages; when the larva is three parts dried then, if a pin-head is struck into it, it resembles ripe honey as much as anything—viz., it can be drawn out into a string, perhaps half an inch long before breaking.

Now what I recognise it by is first a sunken cap—sealed brood cells are convex. If I see a sunken cap amongst the brood I take a pin by the point and remove the cap. Very often I find only sealed honey, and sometimes a white grub, in which case all is right. If the enclosed larvæ is the colour of coffee and milk, not coffee alone, as generally stated, it is diseased; this colour is a sure test, and one that may be relied on. In this stage there is no "elasticity" whatever. At this point, if I could not find any pierced cells, I should wash out the diseased larvæ with undiluted carbolic acid either with a feather or camel's-hair pencil, for as there cannot be any ripe spores to be given off the disease may be localised and thus stamped out. I give this advice to be followed out at this stage, as I have thus stopped the disease in several hives.

If a cell cap is sunken, and it also has a little hole in it, I try it with a pin-head as before. Often it is a healthy larva nearly sealed over, or a honey cell; but if it is of coffee and milk colour it is diseased; the colour in this stage is deeper than the first, but in no stage does it resemble pure coffee unmixed with milk. If such cells are found you may depend upon it that spores are flying off, and no doctoring will pay for trying to preserve the combs. I believe many apiarians have the disease in their hives without knowing it, and therefore I wish to impress this simple means of recognising it. Healthy brood is milk white, the disease then through all its stages just looks as if more and more coffee had been added. Brood chilled to death is either white or black, nor is a full shaped bee diseased. Many dealers and queen breeders boast that they never had foul brood, never saw it, &c., and advise those who want bees or queens never to buy from anyone who has had it. Now, my advice is "Do not put faith in them." No one is safe from foul brood; queens and bees may be diseased long before they are suspected. A man who has had it in his apiary, is quite clear of it, and makes it a point to stamp it out in his neighbourhood, is far safer to buy from. Such a man is always on the look-out, and he will never overlook a sunken cap in the brood nest.—A HALLAMSHIRE BEE-KEEPER.

TO CORRESPONDENTS

*** All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Improving Lawn (*G. A. B.*).—The pressure is so great that your letter cannot be fully answered till next week, nor can some others that arrived only a day before going to press.

Early Tomatoes—Roses (*R.*).—Probably Sutton's Earliest of All Tomato would suit you as well as any for outdoor culture. It is very productive, and the fruit is as good in quality as the variety you name. Probably you could not plant two Roses better likely to answer your purpose than Maréchal Niel and Gloire de Dijon, and they succeed quite well with the roots in good soil outside, and the stems brought inside the house after the manner of Vines; but the outside portions should be protected from frost by haybands. They also grow well planted in good soil in the house and adequately supplied with water. The shading of the soil in the house would not be injurious.

Plants with Blue Flowers (*J. James*).—Plants of various shades of blue for the greenhouse are Agapanthus umbellatus, Burtonia violacea, Crowea saligna major, Diosma capitata, Hovea Celsi, H. pungens major, Kennedya bimaculata variegata, K. inophylla floribunda, Pleroma elegans, Plumbago capensis, and Witsenia corymbosa. For outdoors—Verbena venosa, *Verbena Blue Boy, Anemone apennina, Aubrietia purpurea, Campanula carpatica, Gentiana acaulis, Hepatica double blue, Myosotis arvensis, M. palustris, Scilla sibirica, *Ageratum Imperial Dwarf, Delphinium Barlowi, D. Belladonna, D. Hendersoni, D. formosum, *Heliotropes of sorts, *Veronica Blue Gem, and Centaurea Cyanus major and minor, which are annuals. The blue varieties are very useful for cut flowers. All the others are hardy perennials, except those marked with an asterisk, which require the protection of a greenhouse in winter.

Camellias from Cuttings (*Brooks*).—The best time to put in cuttings of Camellias is when the wood is nearly ripe, which it will be by the end of June or early in July. Take cuttings of the current year's growth 4 or 5 inches long, cut the bottom off smoothly just below a bud, trim off the lowest two leaves, and leave the same number on the cuttings. They may be inserted in 6-inch pots, which should be clean, and have a crock large enough to cover the hole at the bottom; on it place an inch of crocks of smaller size, and another inch of very small ones, and then a very thin layer of moss. The pot should be filled to the rim with two parts sandy loam and one part sandy peat, adding a half part of silver sand. The soil should be made very firm, but use the hand only for pressing. Insert the cuttings about an inch apart round the sides of the pot, and to the extent of half their length, and set the pots on ashes in a cold frame. Keep the cuttings just moist, nearly close, and shade from bright sun. By the middle or end of September they will be rooted, and should be potted off singly and placed in the cold frame; there keep them close, and they will soon become established. Afterwards they should have air freely, and be removed to a greenhouse or pit where they will be safe from frost. This is the mode usually adopted for propagating the single varieties for stocks, and will answer for the others; but experience has shown that the double sorts do not grow nor flower so well on their own roots as when grafted.

Chrysanthemums after Flowering (*Ed. D.*).—The old shoots should be cut down to the ground, and the young shoots which come out of the soil at the base of the old plants should be taken off, either with or without a small portion of root, when 3 or 4 inches long, and should be potted singly in 3-inch pots, placing them half their depth in the soil. The latter should consist of two parts turfy loam and one part leaf soil or well-rotted manure with a sixth of sharp sand. If the shoots have roots they may be plunged in ashes in a cold frame; but if they have none they may be kept in a house with a temperature of from

45° to 50°, and when rooted be removed to the cold frame. Give them air whenever the weather is mild, and protect the lights with mats when necessary. In April, when the roots are showing at the sides of the pots, shift into 5-inch pots, and early in May, or at the end of April if mild, the plants may be placed out of doors on ashes in an open situation sheltered from winds. Shift into the blooming pots by the middle of June, using the same compost as before, with the addition of a quart of half-inch bones to every peck of compost, and we should drain the pots with calcined oyster shells. Eight-inch pots will answer for the Pompons and the less promising of the large flowering kinds, but good plants of the latter may have 10-inch pots. Stop the plants when they are 6 inches high, and when they have made other shoots stop these in their turn at 5 inches. When they have again shoots an inch or two long peg down the shoots, taking care not to break them, and stop again at the fourth leaf, continuing the stopping up to the beginning of July, but not later. Tie out the shoots so as to form a well-shaped plant. Keep them well supplied with water, and when the flower buds appear water with liquid manure. Remove the plants to a cool, light, airy house in October, and merely keep them from frost.

Heat and Plants (*E. Mason*).—Plants, like animals, can bear a higher temperature in dry air than they can in air charged with vapour. Animals are scalded in the latter if the temperature is very elevated, and plants die under similar circumstances, as if boiled. MM. Edwards and Colin found Kidney Beans sustained no injury, when the air was dry, at a temperature of 170°; but they died in a few minutes if the air was moist. Other plants under similar circumstanees would perish probably at a much lower temperature; and the fact affords a warning to the gardener to have the atmosphere in his stoves very dry whenever he wishes to elevate their temperature for the destruction of insects or other purposes. Certain plants flourish in hot-water springs, of which the temperature varies between the scalding heats of from 150° to 180° of Fahrenheit's thermometer; and others have been found growing freely on the edges of volcanoes, in an atmosphere heated above the boiling point of water. Indeed, it is quite certain that most plants will better bear, for a short time, an elevated temperature, which, if long continued would destroy them, than they can a low temperature. Thus a temperature much above the freezing point of water, to orchidaceous and other tropical plants, is generally fatal if endured by them for only a few minutes; whereas a considerable elevation above a salutary temperature is rarely injurious to plants. But this is not universally the ease; for the elegant Primula marginata is so impatient of heat, that, although just about to bloom, it never opens a bud if brought into a room in which there is a fire. The temperature should always be regulated, in our hothouses, with a due regard to the light. At night it should be so low as to put the circulation of the sap into a comparative state of rest; and in dull days the temperature should be full 10° lower than in those of bright sunshine.

Weather Signs (*E. James*).—There are so many "signs" and fancies on this subject that it is impossible to collect and publish the whole of them, as you appear to desire. No doubt the subject is of interest to cultivators, but it is possible to have too much of a good, or bad, thing, just as it may be regarded by different persons who entertain divergent views on the matter. A few of the more marked signs of weather, considered useful alike to farmer and gardener, are the following:—1, Weather clear or cloudy—a rosy sky at sunset presages fine weather; a red sky in the morning bad weather, or much wind (perhaps rain); a grey sky in the morning, fine weather; a high dawn, wind; a low dawn, fair weather. 2, Soft-looking or delicate clouds foretell fine weather, with moderate or light breezes; hard-edged, oily-looking clouds, wind. A dark, gloomy, blue sky is windy; but a light bright blue sky indicates fine weather. Generally, the softer clouds look the less wind (but, perhaps, more rain) may be expected; and the harder, more "greasy," rolled, tufted, or ragged, the stronger the coming wind will prove. Also, a bright yellow sky at sunset presages wind; a pale yellow, wet; and thus by the prevalence of red, yellow, or grey tints, the coming weather may be forctold very nearly—indeed, if aided by instruments, almost exactly. 3, Small, inky-looking clouds forctell rain; light scud-clouds driving across heavy masses show wind and rain; but, if alone, may indicate wind only. 4, High upper clouds crossing the sun, moon, or stars, in a direction different from that of the lower clouds, or the wind then felt below, foretell a change of wind. 5, After fine clear weather, the first signs in the sky of a coming change are unusually light streaks, curls, wisps, or mottled patches of white distant cloud, which increase, and are followed by an overcasting of murky vapour that grows into cloudiness. This appearance, more or less oily, or watery, as wind or rain will prevail, is an infallible sign. 6, Usually, the higher and more distant such clouds seem to be, the more gradual but general the coming change of weather will prove. 7, Light, delicate, quiet tints or colours, with soft undefined forms of clouds, indicate and accompany fine weather; but gaudy or unusual hues, with hard definitely outlined clouds foretell rain, and probably strong wind. 8, Misty clouds forming, or hanging on heights, show wind and rain coming—if they remain, increase, or descend. If they rise or disperse the weather will improve or become fine. 9, Remarkable clearness of atmosphere near the horizon, distant objects, such as hills, usually visible, or raised (by refraction), and what is called "a good hearing day," may be mentioned among the signs of wet, if not wind, to be expected. 10, More than usual twinkling of the stars, indistinctness or apparent multiplication of the moon's horns, haloes, "wind dogs," and the rainbow, are more or less significant of increasing wind, if not approaching rain, with or without wind.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*J. M.*).—It is impossible to name with certainty a leafless spray, but if you will send us a flowering spray, if one is produced, at the right time, or failing that a leaf-bearing branch, we think we shall be able to give the name of the tree.

COVENT GARDEN MARKET.—FEBRUARY 15TH.

Good samples of Grapes are now coming short, and prices have improved all round. Apples in demand. Business better.

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, dozen	1 0	to 2 0	Lettuce, dozen	0 9	to 1 3
Asparagus, bundle	0 0	0 0	Mushrooms, punnet	0 6	1 0
Beans, Kidney, per lb.	1 0	0 0	Mustard and Cress, punt.	0 2	0 0
Beet, Red, dozen	1 0	2 0	Onions, bunch	0 3	0 0
Broccoli, bundle	0 0	0 0	Parsley, dozen bunches	2 0	3 0
Brussels Sprouts, ½ sieve	3 6	4 0	Parsnips, dozen	1 0	0 0
Cabbage, dozen	1 6	0 0	Potatoes, per cwt.	4 0	5 0
Capsicums, per 100	1 6	2 0	,, Kidney, per cwt.	4 0	0 0
Carrots, bunch	0 4	0 0	Rhubarb, bundle	0 2	0 0
Cauliflowers, dozen	3 0	4 0	Salsafy, bundle	1 0	1 6
Celery, bundle	1 6	2 0	Scorzonera, bundle	1 6	0 0
Coleworts, doz. bunches	2 0	4 0	Seakale, basket	1 0	1 3
Cucumbers, each	0 6	1 3	Shallots, per lb.	0 3	0 0
Endive, dozen	1 0	2 0	Spinach, bushel	1 6	2 0
Herbs, bunch	0 2	0 0	Tomatoes, per lb.	0 6	1 0
Leeks, bunch	0 3	0 4	Turnips, bunch	0 4	0 6

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve	2 6	to 4 6	Oranges, per 100	2 0	to 5 0
Nova Scotia and Canada barrel	10 0	18 0	Pears, dozen	3 0	6 0
Cobs, 100 lbs.	45 0	0 0	Pine Apples, English, per lb.	0 0	0 0
Grapes, per lb.	3 6	5 0	St. Michael Pines, each	3 0	5 0
Lemons, case	10 0	15 0			

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, dozen	6 0	to 12 0	Fuchsia, dozen	0 0	to 0 0
Arbor vitæ (golden) dozen	6 0	9 0	Genista, per dozen	6 0	12 0
,, (common), dozen	0 0	0 0	Hyacinths, dozen	6 0	12 0
Azalea, dozen	24 0	42 0	,, (Roman), doz.	9 0	10 0
Cineraria, dozen	8 0	12 0	Hydrangea, dozen	0 0	0 0
Cyclamen, dozen	12 0	24 0	Lilies Valley, dozen	18 0	24 0
Dielytra, per dozen	12 0	18 0	Lilium lancifolium, doz.	0 0	0 0
Deutzia, per dozen	6 0	9 0	Marguerite Daisy, dozen	9 0	12 0
Dracæna terminalis, doz.	30 0	60 0	Myrtles, dozen	6 0	12 0
,, viridis, dozen	12 0	24 0	Narciss, per dozen	8 0	10 0
Epiphyllum, dozen	10 0	18 0	Palms, in var., each	2 6	21 0
Erica, various, dozen	9 0	18 0	Pelargoniums, dozen	0 0	0
Euonymus, in var., dozen	6 0	18 0	,, scarlet, doz.	6 0	9 0
Evergreens, in var., dozen	6 0	24 0	Poinsettia, dozen	0 0	0 0
Ferns, in variety, dozen	4 0	18 0	Solanum, dozen	9 0	12 0
Ficus elastica, each	1 6	7 0	Tulips, dozen pots	6 0	9 0
Foliage Plants, var., each	2 0	10 0			

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Abutilons, 12 bunches	3 0	to 6 0	Lilies, White, 12 bunches	0 0	to 0 0
Anemones (French), 12 bunches	3 0	4 0	,, Orange, 12 bunches	0 0	0 0
Arum Lilies, 12 blooms	4 0	6 0	Lily of the Valley, 12 sprays	0 6	1 0
Azalea, 12 sprays	0 8	1 0	Mignonette, 12 bunches	3 0	6 0
Bouvardias, bunch	0 6	1 0	Narcise, white (French) 12 bunches	2 0	4 0
Camellias, 12 blooms	1 6	4 0	Narciss, various, 12 bchs	3 0	6 0
Carnations, 12 blooms	1 0	3 0	Pelargoniums, 12 trusses	1 0	1 6
Christmas Roses or Hellebore, 12 blooms	0 6	1 6	,, scarlet, 12 trusses	0 6	0 9
Chrysanthemums, 12 bchs.	12 0	18 0	Poinsettia, 12 blooms	2 0	5 0
,, 12 blooms	0 0	0 0	Primroses, 12 bunches	1 0	3 0
Cyclamen, 12 blooms	0 6	1 0	Primula (single), bunch	0 6	0 0
Daffodils, Double, 12 bchs	6 0	12 0	,, (double), bunch	0 9	1 6
,, Single, 12 bchs	12 0	18 0	Roses, Red, 12 blooms	6 0	9 0
Daisies, 12 bunches	2 0	4 0	,, (indoor), dozen	3 0	4 0
Epiphyllum, 12 blooms	0 6	0 9	,, Tea, dozen	1 6	6 0
Encharis, dozen	4 0	6 0	red, dozen (French)	1 6	3 0
Gardenias, 12 blooms	12 0	24 0	,, yellow	4 0	9 0
Hyacinths, Roman, 12 sprays	0 6	1 0	Snowdrops, 12 bunches	1 0	2 0
,, French, 12 bunches	1 6	4 0	Stephanotis, 12 sprays	0 0	0 0
Lapageria, coloured, 12 blooms	1 0	1 6	Tropæolum, 12 bunches	2 0	3 0
Lilium longiflorum, 12 blooms	6 0	9 0	Tuberoses, 12 blooms	2 0	3 0
Marguerites, 12 bunches	2 0	6 0	Tulips, dozen blooms	0 9	1 0
			Violets, 12 bunches	1 0	1 6
			,, (French), bunch	1 6	2 0
			,, (Parme), bunch	5 0	7 0
			White Lilac, per bunch	5 0	6 0



PERMANENT PASTURE.

ONE of the subjects for discussion in which we took part at a recent meeting of our local Farmers' Club was permanent pasture,

and while the members present were unanimous in saying that there ought to be a larger proportion of pasture upon farms in the great corn-growing districts, they were evidently not at all clear as to how this was to be effected. The chief hindrance to laying down land to pasture is the very common but erroneous hypothesis that it requires a lifetime to form really sound productive pasture, and as usual, we find that in this, ignorance and obstinacy go together.

Now we know plenty of old, very old pasture that is in sorry plight, and from which the annual bulk of produce is so low that it cannot be profitable. But our knowledge of this lamentable fact cannot be regarded as singular. Let anyone with ordinary powers of observation look at such meadows as are to be seen in a journey of a hundred miles by railway in this season of the year, and what will they see? Why, precisely what comes under our notice repeatedly, and that is fully two-thirds of them are brown, bare of food even for sheep, and so foul with weeds as to present a ragged untidy aspect of poverty and negligence. Neither cattle nor sheep will consume many of the perennial weeds with which such foul pastures are infested, and they consequently remain in winter a visible sign of bad practice. We use the term advisedly, for surely it cannot be owing to ignorance that such robbers of the soil are suffered to become established and to spread in it?

We have taken some pains to explain how land intended for permanent pasture must be prepared for the seed by drainage, if necessary, by a thorough clearance from it of couch grass and other perennial weeds, and by sufficient ploughing and stirring to insure a deep tilth and fine seed bed. We have gone farther, and shown how, with careful folding by well-fed lambs in the first season, and by ewes and lambs in the second season, a really well-knit pasture may be had at a minimum cost in two years, and we have been met in discussion by the shallow argument, "Yes; you may be able to establish good pasture in two years, but the question is, How are you to keep it good?" The answer to this is obvious—*i.e.*, By an equally careful process of cultivation year by year. This is the point we wish to enforce, that pasture requires careful cultivation equally with all other farm crops, and we may add that experience shows such cultivation to be profitable. It is high time that all easy-going practice in agriculture were ended. We hold that no full crop can be taken from the land without a certain per-centage of exhaustion of its fertility; and in order to obtain an equally full crop next season such loss must first of all be made good. Now, we have heard excellent practical farmers declare that they have little faith in chemists or nicety of analysis, but surely common sense must tell them that in order to obtain a full crop from the soil it must contain a full store of plant food. We must not rest content with half crops, but we must ascertain how much per acre by weight or measure it is possible to obtain of each sort of grain, foliage, or roots, and that maximum quantity must be our common standard subsequently, and we ought not to rest content with anything short of it. How obvious is the absurdity of the application of manure for one farm crop, and then following with another crop without manure simply because the first crop has not exhausted all the manurial constituents imparted to the soil by such manure! The second crop may be, and frequently is, one of medium excellence, but we certainly ought not to be satisfied with a medium crop when it is possible to obtain a maximum one. But we may be told that to apply manure annually is so expensive. We reply that results invariably justify the expense in a given number of years, for to take the result of an extremely good or bad season would be misleading, and we must compare the common result of four or five seasons.

Our remarks now on the treatment of permanent pasture may be regarded as especially to the purpose now, for this is the best time of all the year for the application of manure, and we strongly recommend our readers to do what is possible at once to eradicate Ononis, Gorse, Nettles, Rushes, Thistles, Brambles, and Broom from pasture, to mow down any long Sedges or other rough herbage, and by the end of the month to apply per acre a quarter of a cwt. nitrate of potash, 1 cwt. nitrate of soda, 1½ cwt. mineral superphosphate, and a quarter of a cwt. steamed bone flour. Take care to procure each sort of manure separately from a reliable source, and have the mixture made at the farm three or four days before using it. By keeping down weeds by an annual dressing of this manure or sheep-folding, and by draining when necessary, pasture may be brought into a high state of fertility, which may be fully sustained under such treatment. The outlay of £1 per acre or a shilling or two more for manure will not only insure a full crop of hay, but an abundant aftermath with favourable weather, and the pasture will also present a green flourishing appearance during winter in pleasant contrast to the brown stunted guise of neglected pasture.

WORK ON THE HOME FARM.

All our calculations and arrangements for our spring supply of chemicals are complete, and the order for a supply to be sent to each of our farms has been given. The total quantity by weight is about 52 tons, and the cost, inclusive of carriage by rail, is about £400. In comparison with special mixtures on the market this quantity represents a much greater weight, because the whole of the manures are genuine and the fertilising power of all of them is high. In addition to this supply of chemical manures, we have folded sheep upon a large area of land, and we have also used a considerable quantity of farmyard manure taken in valuation upon the two additional farms which came upon our hands last Michaelmas—about a thousand cartloads in all, so that we have done all we could to store the land with fertility. In our manure book is shown the calculations of quantities for every crop at each farm, with totals and cost, so that we can always refer to it, and also have the necessary details taken from it for the guidance of our bailiffs. The manure has been ordered early in order to have it at hand both for pasture, winter and spring corn, and it will be applied so far as is possible by means of drills rather than by hand, for however careful men may be, hand-sowing can never equal or even approach the accuracy of machinery.

Spring corn sowing will be pushed on with as soon as the soil is ready, the land, seed, and manure being all in readiness. We hope to obtain as high a yield of Wheat by careful cultivation on our best farms as we did last season. If we are again able to get 56 bushels per acre we know that even under present low prices we shall obtain a handsome margin of profit, but we could not do so if we were content to attempt Wheat growing without thoroughly sound all-round practice. Take for example the Wheat averages of last year, and we find that in Russia the average yield per acre was as low as 12 bushels, in France 17 bushels, and in Great Britain 32 bushels, or 5 bushels more than the average of 1886. Well, now, have we not reason—apart from egotism—for saying that the only way to meet and overcome the foreign importation of Wheat is so to cultivate the land as to produce more of it? Certainly we know that we have, for by high cultivation we are able to bring farmed out land into such a state of fertility as to render its produce really profitable even at present low prices.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				
1888. Febrnary.	Barometer at 32° and Sea Level.	Hygrometer. Dry.	Hygrometer. Wet.	Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature. Max.	Shade Temperature. Min.	Radiation Temperature. In sun.	Radiation Temperature. On grass	Rain
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 5	30.234	43.8	42.8	W.	36.2	50.6	40 8	68.6	36.5	—
Monday..... 6	30.259	46.5	44.6	N.	37.9	52.0	39.7	60.2	32.7	—
Tuesday 7	30.221	44.3	41.2	W.	39.2	50.3	42.6	76.7	37.6	0.043
Wednesday.. 8	29.986	44.2	42.2	N.W.	39.2	49.9	39.9	67.9	33.1	0.033
Thursday.... 9	29.984	47.1	44.6	N.W.	39.8	49.7	44.0	74.2	38.8	—
Friday 10	29.871	41.3	40.2	S.W.	40.2	47.2	39.1	58 7	34.9	0.052
Saturday 11	29.653	36.3	34.9	S.W.	39 8	43.4	33.2	52.8	27.6	0.044
	30.037	43.4	41.5		38.9	49.0	39.9	65.6	34.5	0.170

REMARKS.

5th.—Calm and generally dull, but with a little sunshine at mid-day.
6th.—Cloudy all day.
7th.—Generally bright, but clouded over once or twice, with spots of rain.
8th.—Rain early; a cloudy day, with one or two intervals of sunshine.
9th.—Rain in the small hours; a fine and generally bright day.
10th.—Cloudy morning; spots of rain in the afternoon.
11th.—Dull morning, with spots of rain; frequent rain in afternoon and evening.

A warm and pleasant week, for although rain fell on four days the amounts were small, and the greater part fell at night. Temperature 6° above the average, and more than 10° above that of the preceding week.—G. J. SYMONS.

IS CHISWICK TO GO?

ONE of the most important decisions ever arrived at as affecting the interests of the Royal Horticultural Society was registered after the last general meeting. This was done under the impulse imparted by the special Committee. The Committee, which has exercised power and relieved itself of responsibility, recommended measures involving an expenditure of £700 at a time when the Society is in debt to the extent of upwards of £1000, and when the estimated income for the year is £2000, and the estimated expenditure only a trifle below, and will probably exceed £3000. The Committee relieved itself of responsibility by inducing the meeting to "adopt" their report, and the Council was "empowered," which virtually means in that case compelled, to carry out their recommendations. The Council in turn was thus relieved of a large share of responsibility, and so matters became loose all round.

The motives of the Committee, it may be conceded, were of the best. The desire of its members, which include some members of the Council, was to strengthen the Society and find a base on which it could rest firmly for future working. It is to be presumed that the exact financial position of the Society was fully appreciated by every member of the directing body; but was this equally appreciated by the Fellows of the Society who constituted the meeting that "adopted" the Committee's report? It is questionable if half of them comprehended it, for the matter was not placed before the meeting, or at least not so clearly as it will be placed before the public now. This can be done the more freely since it is impossible to suspect the conductors of this Journal of being animated by any other feelings than those of deep sympathy with the Society and earnest wishes for its stability and prosperity.

When the report of the Committee was adopted by the meeting forcing the Council to commit the Society to a definite line of action involving an expenditure that will probably be little short of £1000, the Society was actually in debt to the amount of £1152. But it may seem that against that there is the special list of promised donations and subscriptions, the former amounting in round figures to £1210 and the latter to £208. But let it be understood that the first of these contributions must be left entirely out of the estimates. It was never intended for the general revenue of the Society, and will never be paid into it. It was promised for a specified purpose—namely, as the nucleus of a fund for providing a permanent home for the Society. It can neither be applied to the maintenance of Chiswick, nor to the payment of the rent of the new rooms and hall that are essentially of a temporary character. Were all the members of the Committee cognisant of that, and was the fact present to their minds when they recommended their report incurring liabilities without the means for meeting them? That is a fair and reasonable question, also a somewhat serious one to those members who do not happen to be able to answer it in the affirmative. There then arises the further question—Did the Fellows who adopted the report fully and clearly understand that the money in question could not be devoted to the ordinary purposes of the Society? It is practically certain they did not, and, if that is so, the resolution was passed in ignorance of a circumstance having an important bearing on the whole matter. And on whom did the duty devolve of making the point clear but on the Committee that formulated the report, and induced the meeting, having faith in its wisdom and safety, to adopt it? Well will it be if the decision arrived at so hastily does not result in obstacles not easy to remove from the path that it is hoped may lead to prosperity. Only extraordinary zeal, vigilance, and prudence can now place the Society in a satisfactory state; and it is with the object of stimulating effort on those lines that attention is called to the real state of affairs, as revealed by the published report and advertisement.

FINANCIAL ESTIMATE.

Income.	£	£	Liabilities.	£
By Subscriptions...	1500		Chiswick	1300
Sale of Chiswick produce.....	500		Establishment Expenses (see Report)	845
		2000	Assistant Secretary's Salary	200
			Exhibitions	234
			Offices	120
			Hall	100
			Committees	127
Balance against Income ...		2078	Debt	1152
		£4078		£4078

That is a sufficiently serious statement. Let it be examined, and the best or the worst made of it, and the necessity for strenuous action on the part of all who are responsible for the position will be apparent. The responsibility rests virtually on the Committee, though technically it was removed from them and incurred by the Fellows in their adoption of the report; also by the Council, inasmuch as they did not reject it when forced on them. Having accepted the liability imposed, they must meet it in the best way they can. The moment for dignified retirement has passed, and they must work under the Committee they have accepted, and which, as a body, is so well satisfied with the work achieved, that the members of it recommended their continuance in office another year, with "power to add to their number" to an unlimited extent. This power, too, is being exercised, and it is noticeable that the two opposition candidates to their own nominees for the Council are now added; it is hoped they will enjoy the solatium and no longer criticise adversely. There seems a probability that the Society will, ere long, have no free critics, which would be, perhaps, the worst thing that could befall it.

But how could the position have been improved? The answer is, by adopting a recuperative instead of an adventurous policy for a year. If the Committees sat at Chiswick for a season, what was really new and good would have found its way to them by a quarter of an hour's further train run from South Kensington and a three minutes' walk—a much shorter walk than before. Then the £234 for shows would have been saved, that have not brought the Society as many shillings; about £200 out of the £250 for rooms and hall could have been saved, and for the time, say £200 for a paid secretary, utilising the services of Mr. Dick and Mr. Barron to the fullest extent, and it is probable they would have done more for the Society than a stranger can in the year. Moreover, however competent a new official may be, he cannot work effectively without further expenditure, and where is the money to come from?

The President, in his speech at the meeting, dwelt on the Society not having taken advantage of gleams of sunshine, and putting money by for a rainy day, but, on the contrary, the fitful gleams had done rather more harm than good in leading to extravagance. The meeting on the 14th was of a sunshiny nature, and spirits were high and hearts gay. History then repeated itself, and speculation to the extent of between £600 and £700 was indulged in. Most sincerely do we hope it will prove a wise investment, and heartily glad shall we be if our grave doubts on the matter prove groundless.

It is for all those responsible for the policy adopted to prove it right—to determine that it shall succeed. It is a question of reputations, or of the Society perishing; and it is more than ever

certain if its garden is not made a producer of revenue to the greatest extent possible, that Chiswick must go sooner or later. Can there be a desire for this? Nothing but the success of the new venture can prevent the famous old garden being starved into inanition. Chiswick, with all its traditions, its present fine, if not unequalled, collection of fruits, and resources for future usefulness at a time when, if utilised, they would be of national benefit—Must it perish? and the Royal Horticultural Society be thereby deprived of the honour of teaching the way, as suggested by Dr. Masters in a pregnaut sentence at the meeting, of showing how the land in England, now depreciating in value, can be profitably cultivated? That can be shown undoubtedly, if scope be afforded and means provided for conducting cultural experiments on a commercial basis to their final issue; and what is more, no other garden in the kindom could carry out the work, most important and most honourable, so well. There is no doubt the Committee desire to see Chiswick flourish, and the only way in which means can be afforded is by making the expenditure remunerative, gaining a continuous stream of supporters, and turning the productive power of the garden to substantial account.

I was glad to read your leading article (page 121) on the R.H.S. Do anything rather than let Chiswick go. Everybody trades nowadays, and if labour is honourable trade is also honourable. Sell to anybody if Chiswick can be preserved. The loss of Chiswick, as I take it, will be the end of the Society. I sometimes think that in gardening, as in many other arts and sciences, the better the trade returns the better the science. Horticulture must get rid of its diletantteism, and, like the proverbial tub, stand on its own bottom. Take Veitch's nursery as an example, managed more scientifically, and doing better scientific work than half the so-called experimental and botanical gardens in Europe, and moreover paying its way. In a word a scientific success is, or ought to be, a practical or pecuniary success as well, and in the cases above quoted it really is so. My aphorism is, I feel sure, correct—viz., that our future farming will be gardening in the fields. A focus of power on smaller areas, glass protected or otherwise, must supplant the rude or rough-and-ready culture now scotched and often strangled by foreign competition. The struggle of the future will not be with brute force, but in organisation and brain power of the finest and best.—F. W. B.

EUCHARIS CULTURE.

I should like to say a few words about Eucharis culture. When I took charge of these gardens about eight years ago the Eucharises were in a very bad condition—indeed, I found about a dozen 8-inch pots filled with bulbs with scarcely any leaves, and these were only a few inches long—spotted, wrinkled, broken, and unhealthy. The soil was very wet and sour, with plenty of little mites all round and in the bulbs that I thought were this dreadful Eucharis mite, but a few experiments proved to my satisfaction that they were not, but only a small white mite living ou the decaying matter on and near the bulbs.

Like "M. D." we washed, sorted, and placed all the healthiest-looking bulbs iu pots to suit the different sizes, in about the same compost as recommended by Mr. Pettigrew, and placed them in their old position—an open, wooden, tressle-work stage near the glass in a span-roof house, where the temperature very often stands about 50°, and in very hard weather as low as 45°. After potting they had no water for a long time. The place being cool they did not start to grow until well on in the summer, but with plenty of sun heat and keeping the atmosphere as moist as possible they started at first slowly, but they gradually gained strength, and when well started we began to supply water very carefully, simply giving enough to moisten the soil. The same treatment was followed all that year, never syringing the plants, but keeping the stage and outside of the pots syringed as often as we could to supply the moisture about them that we kuow they like. These plants have grown and been potted as they required it, always giving them the same kind of soil, and only varying the treatment when in full growth. By giving more water and occasional supplies of liquid manure we encouraged them to make a good growth, and gradually decreased the supply as they seemed to stop growing, or until they were well ripened. Now we have a dozen plants from 3 feet to 4 feet 6 inches across, with plenty of the leaves, our best plant in a 15-inch pot measuring 3 feet in diameter. They flower regularly three and four times a year; the last time, during October and November, we gathered 350 blooms, and once before we gathered over 600 in one month, and all under the dry system that Mr. Pettigrew condemns. No doubt with a large house, the plants plunged, and with plenty of heat, light, and air, they will stand more water and do well, but if we were to water ours as Mr. Pettigrew recommends we should certainly kill them. My advice to all that have or try to grow Eucharises with only a limited supply of heat is keep them moderately dry, only giving them enough to keep the leaves fresh and prevent much limpness during the cold part of the year, and just enough when growing to encourage them to finish or ripen it well. I am of the same opinion as "M. D.," that it is far better to err in giving too little than too much water.

Perhaps Mr. Pettigrew will kindly tell us what heat suits Eucharises best, or rather what temperature his plants are grown in, and whether they are plunged or not, and if plunged the heat of the bed, and of what it is composed. I am inclined to think from the quantity of water they receive that they are not plunged, but in a dry position near the glass or over hot pipes.—A. Haggart.

APRICOTS AND PLUMS.

I find these fruits do well under the same general treatment, the latter when grown on a wall being a most important dessert fruit, and well repaying any extra attention that may be bestowed upon the trees. No sorts I have had experience with are superior to the old Green Gage, Jefferson, and Coe's Goldeu Drop.

As to the best Apricots, I suppose we cannot pass the Moorpark so far as flavour is concerned, but its very slow habit of growth and incurable disease makes us hesitate to grow it as much as the high quality of its fruit would otherwise induce us to do. Shipley I find to be a very good substitute; the flavour is excellent, the fruit of good size, and the tree fills up wall space rapidly. For preserving and kitchen purposes the Royal is a good strong-growing, free-bearing, healthy variety, and very reliable. In order to keep a supply of healthy young trees I have been in the habit of buying in a few every second year, placing them about on any open portion of those walls having a southern exposure. I invariably select trees one year from the bud, and procure them from the nursery as early in the season as possible.

Apricots as a rule differ from Plums in the maiden stage, inasmuch as the former have made a shorter sturdier growth, often with a few young shoots springing up the lower portion of the stem. Plums, if they have broken into side shoots, generally do so towards the upper portion of the season's growth. Consequently at this stage the method of pruning is somewhat different, Plums requiring to be cut back to within a foot of the stock, or if weakly somewhat closer. Apricots, on the other hand, may simply have a portion of the top cut off, at the same time thinning the side shoots, so as to have only sufficient to lay in not too closely. If a neat-fashioned tree is wanted, then the growth must be cut back in the same way as recommended for Plums. The beginning of February is a good time to prune. The after treatment of the shoots in both cases is the same. Superfluous buds should be rubbed off, and only those required to form the base of the tree allowed to grow. I do not find it necessary to pinch strong growths in order to make the different parts of the tree balance, for if allowed to grow freely these strong shoots will throw out plenty of smaller side growths, which must be thinned and laid in as needed. All the pruning the trees need should be done while the trees are in foliage, and by September it is quite possible to see what is required to be cut out or shortened. The treatment of after years consists in merely allowing a sufficient number of shoots to grow, so that the wall may be rapidly covered without in any way overcrowding them. Allow at least 6 inches between the growths. The young trees must be transplanted the second year into their permanent quarters, and may safely be lifted in October, or even earlier if the soil is in good condition.

The method of pruning I find does best here is that which makes a supply of healthy fruit-bearing spurs, and these not crowded. For years we have had to thin both Plums and Apricots to a very great extent, the spurs, as a rule, being clustered with fruit, and as not more than two fruits are allowed to remain to the spur, and often only one, the amount of thinning which has to be undertaken is no slight labour; but it pays, as the fruit is so much better both as to size and quality, and the next year's crop is not prejudiced by overtaxing the trees to forward that of the current year. Of Plums we have some very aged trees, but these do not pay so well as younger stocks, which if not bearing more freely at least produce finer fruits.

Disbudding I consider to be a point of great importance. Of course I understand that this and thinning the fruits are recognised points in the cultivation of these fruits, but I do not think either process is carried so far as is profitable. To leave a number of young budding growths, which by-and-by crowd those which are to remain, to pinch them back, and finally to have to remove them altogether, after allowing them to interfere with the foliage and growths, is not economy. Far better is it to thin freely both fruit and growths early in the season.

The time to prune is doubtless as soon as the fruit is removed. Pruning under this system is a very simple process, but there are always a few spurs which outgrow their bounds, some of them needing removal altogether, others merely cutting back. The work at nailing time, which is most expeditiously overcome in early spring and on warm days, is reduced very considerably by this autumn pruning. As to nailing, those who have not adopted the spring practice can form no conception of the rapidity with which it is overtaken at this season. There are no cold feet to be warmed, no numbed fingers to be restored to a state of semi-torpidity. Recalling my own experience, I failed sometimes to be aware of the possession of fingers at all until a smart knock with a hammer demonstrated the fact. When mornings are chilly the time is best employed in digging or any other similar work until the air gets warmed, leaving the nailing altogether on cold days. I have said nothing about making borders, for the simple reason that it is often unnecessary, most often I should say. The soil in which young trees are planted may be any good loam, not turf, unless plenty of water can be given. But the most remarkable root-producing, and at the same time fruit-producing, material I have tried is common garden refuse. Our Apricots have so completely taken possession of the borders dressed with the above material—properly prepared, of course—that it is impossible to get anything on the borders for roots. Last autumn we had simply to add a further coating of this material, and no doubt by the end of another season they will be ready for more.

It only remains to say a few words as to the gathering of the fruits. The best practice I find is to examine the trees at intervals, depending on the heat or coolness of the weather, and remove all that are ripe or nearly approaching ripeness. Laid on the shelves of a cool fruit room they keep for a few days, and as a rule improve in flavour. Coe's Golden Drop Plum if gathered in a fit state and kept dry keeps a very long time. In seasons when it does not ripen well, the advantage of placing the fruits in a warm house will be noted, as they ripen very well under such treatment. The old Green Gage should be allowed to become dead ripe if possible before gathering. Moorpark Apricot is also best allowed to hang as long as possible on the tree, but if the weather is not of a ripening nature it is safer to remove as above recommended. Jefferson Plum, it may be noted, is grown alike for cooking and preserving purposes.—B.

GARDENERS' DIARIES.

These few remarks on the above subject are especially addressed to under gardeners. A well kept diary of garden operations is nevertheless very useful to head gardeners also ; but every young gardener, without exception, should keep one.

I know of no system so calculated to impart a thorough knowledge of gardening and all pertaining thereto as a systematic and well kept diary of operations. They are now so cheap as to be within the reach of all, and a shilling or two per year invested in them will amply repay the purchaser. To those employed in very large gardens I would say, Rather keep two than one, so that one can be used for the inside work, and the other for the kitchen garden.

Most young men will have ample means for obtaining particulars as to all indoor work, either from personal observation (which is always advisable) or from the foremen of each department ; and if he will take a walk round the kitchen garden each evening after tea he will be able to see what has been done during the day in that department. I think also head gardeners would assist with any information asked for in connection with the outside work. All seeds sown and crops planted should be written with red ink, leaving a space opposite for remarks "as to what time such crops reach maturity, also for particulars as to quality and fruitfulness." This with other items as to preparation of ground to be written with black ink. Finishing each day with the state of the weather and temperature.

The diary of indoor work should be much on the same principle —viz., all important matters, such as starting vineries, Peach houses, and forcing of all kinds, sowing seeds and potting to be in red ink, leaving as previously advised a space opposite for remarks, and the temperatures of each department. Notice should also be made of the composts the different plants are grown in, also results ; in fact, any little matters noticed as worth recording should be added ; and I venture to say any young man who is at all observant and interested in his work may collect a large amount of valuable information, which he will find most useful when the cares and responsibility of managing a garden devolve upon himself ; and the very fact of looking into things and carefully noticing them (which he will be obliged to do if he keeps a diary as it should be kept) will tend towards gaining a thorough knowledge of the work more than any other mode of teaching.—J. H. L.

SPARMANNIA AFRICANA.

This Sparmannia is a most useful winter flowering greenhouse plant, either in a large or a small state. Well developed trusses of flowers arranged singly in specimen glasses with some Maidenhair or other Fern fronds are very pleasing. Bushy dwarf plants in 48 or 32-sized pots can be had, and are useful alike for the house or conservatory decoration. Short stout side shoots about 3 inches long may be taken early in March and rooted in a gentle bottom heat, repotted into a larger size as required, pinching the points of the shoots when 4 inches high, and again when the succeeding branches have advanced that length. The soil best suited for its culture is a mixture of loam and peat, two of the former to one of the latter, some partly decayed horse manure, and some sand, potting the plants firmly to induce a stocky growth. Take the young plants from the bottom heat where the cuttings were struck, and gradually harden them until they can be placed in a cool greenhouse, where they may remain during the summer and autumn. During the months of December and January a few degrees warmer will much assist the development of their flowers. At all seasons, particularly during the hot summer days, a plentiful supply of water to the roots is necessary to keep the foliage a deep green colour, otherwise a delicate colour is quickly discerned if the plants are allowed to remain dry at the roots for any length. Deep green foliage enhances the appearance of the plants so much that especial pains should be taken to procure it.—E. Molyneux.

HOW TO GROW MELONS.

I have received a letter from a young gardener asking me to tell him how to grow Melons, and it struck me that the information might also prove useful to readers of the Journal. So I append it.

Assuming that you have ordinary garden frames and that you understand how to make a hotbed, sow the seeds singly in small pots three parts filled with light loamy soil, covering lightly with some of the same mould, and plunge in the hotbed, covering the pots with glass. This, however, should be removed as soon as the young plants appear, and when they have made 2 inches of growth top-dress with soil which had been previously in the frame for twenty-four hours to become slightly warmed, taking care not to damage the stems of the plants, as they are very easily injured by the slightest pressure of the hand at this stage of their growth. When the plants have made three rough leaves plant them on a ridge along the centre of the bed about 15 inches wide and 9 inches deep, the surface of the edge being 9 inches from the glass. Set two plants at 9 inches apart on the ridge in each light, being careful not to bury the stems any deeper in the ridge than they were in the pots, and make the soil firm about the roots. Then give a little lukewarm water through a rose to settle the soil, and shade the plants from sun for a few days until the roots have taken to the soil, when it may be discontinued. As the roots push through the sides of the ridge add a couple of inches thick of soil, and continue to make such additions until the space between the ridge and frame is filled.

When the plants have made fresh growth pinch out the points to cause them to branch. Three of the shoots resulting from this stopping should be trained thinly over the surface of the bed, and when these have made about 15 inches of growth they also must be stopped, which will result in fruit-bearing laterals being produced, in their turn to be stopped at one joint beyond the fruit. Keep all other shoots that may afterwards appear pinched out. When the fruit blossoms open fertilise them, until sufficient fruits for a crop are secured. Four fruits will be enough for each plant to ripen, and these should be about the same size, and distributed pretty regularly over the individual plants. When the plants are in flower, and again when the fruit is approaching maturity, water should not be distributed over the leaves or bed, and air must be admitted more freely than hitherto until the fruit is set. Then close the frame early enough in the afternoon to raise the temperature to 85° or 90° with sun heat, damping the foliage at the same time. Very little water need be given at the roots after the

latter have pushed well into the bed of fermenting manure beneath.

Provide a night temperature of 65° to 70°. This may be secured by making up the linings every fortnight, removing the spent materials, and supplying hot dung and leaves, covering the glass with mats and fern. Admit a little air in the morning when the thermometer reaches 75°, increasing the amount given when a temperature of 80° is indicated, adding thereto when the glass registers 85°. If the above details are carried out in an intelligent manner there need be no doubt about success in the first attempt to grow Melons. If two or three frames are to be devoted to them sow seed at intervals.—H. W. WARD.



LÆLIA SUPERBIENS.

HEREWITH I send you a note on Lælia superbiens, an Orchid which does not bloom freely in an intermediate house, although it grows very freely, throws out splendid air roots, and makes fine pseudo-bulbs. Several plants have been grown in an intermediate house for some years, one only of which bloomed. Not being satisfied with plants of two dozen pseudo-bulbs without flowers, I decided to place them in a higher temperature, drier atmosphere, with more light, last summer, and the result is several fine spikes of bloom 5 feet long. The plants were returned to the intermediate house in the end of the summer, and continue there. One young plant has been grown in a stove for several years, has increased the size of pseudo-bulbs annually, and has now flowered for the first time.

This plant does not flower until the pseudo-bulbs are of large size, and it should be grown in high temperature, somewhat dry at the end of summer to consolidate the growth. The flower spikes are several months developing, but is a noble plant in bloom.—G. H.

AN UNCOMMON ORCHID DISPLAY.

IN one of the Orchid houses at Waddon House, Croydon, Mr. Philip Crowley has had during the past week or two a display of flowers quite unique in the method of arrangement adopted and exceptionally beautiful. The house is a small span-roof structure with side stages and a path down the centre, and is devoted chiefly to Cœlogynes, Dendrobiums, and a few other Orchids. Upon one of the side stages are about a dozen graud specimens of Cœlogyne cristata, from 2 to 3 feet in diameter, and bearing some hundreds of flowers, three to seven in a raceme. The variety is a very good one, the sepals and petals massive, broad, and pure white, with a fine orange tint in the lip, a smaller but healthy plant of the delicate C. cristata Lemoniana being also included amongst them. The Cœlogynes alone are worth going a long way to see, but their beauty is considerably heightened by a number of plants of Ada aurantiaca arranged alternately with them, and which, judging by the numerous spikes, large flowers, and unusually deep orange colour, thoroughly appreciate the treatment they receive. Suspended from the roof in small 60-size pots are a dozen or more plants of Sericographis Ghiesbreghtiana, and the long slender sprays of rosy crimson tubular flowers drooping gracefully over the pure Cœlogynes produce a delightful effect. It is one of the most pleasing and tasteful examples of grouping that I have seen, and the gardener, Mr. W. King, must be congratulated both on the healthy condition of the plants and the manner in which they are associated.

CYPRIPEDIUM VAN HOUTTEI.

Hybrid Cypripediums are now in the acme of their popularity, and the demand for rarities or novelties is very great. Several amateurs, both in England and on the Continent, have formed valuable collections of these plants, and amongst them M. Jules Hye-Leysen of Ghent is noted for the representatives of choice species, hybrids or varieties included, in his houses. Three years ago I had the pleasure of inspecting his plants in company with Mr. Manning (Messrs. J. Veitch & Sons' courteous manager), and I was equally surprised at the numbers of scarce forms and their vigorous health. It was evident that both their collection and culture had been carefully studied with the enthusiasm amateurs usually display in horticultural matters. I now learn that M. Jules Hye has recently flowered a remarkable novelty, which when exhibited at the last meeting of Belgian Horticulturists was awarded a certificate "*par acclamation*." M. L. Masereel of Ghent when in London last week brought over a flower of this Cypripedium which I had the good fortune to see, and to that gentleman I am indebted for the following particulars. It was obtained by M. Jules Hye from M. Jules de Cock, who had it from M. Louis Van Houtte amongst plants of C. Dauthieri, which it resembles in habit and foliage. There is a probability that it reached Belgium originally from England, and some think is one of the Veitchian productions. The first price paid was a very moderate one, but now it is valued at over 100 guineas. The flower is a bold one, well formed, and quite distinct in colouring; the dorsal sepal is nearly circular, broad, and of a fine purple tint margined with white; the lip is also freely proportioned, and the petals are purplish at the base, but the chief beauty of the plant is in the dorsal sepal. Some have thought that it is a hybrid between C. Dauthieri and C. niveum, but it is only conjecture.—L. CASTLE.

WHAT IS AN HERBACEOUS PLANT?

WHILE taking a general view of horticulture in the past year, your correspondent, "D., *Deal*," in his reference to herbaceous and alpine plants at page 39, touches upon the important and, using his own words, "thorny questions," first, "What is to be considered an herbaceous plant?" and, secondly, "Do bulbs come under that designation?" Without attempting to decide, I may be permitted to offer an opinion respecting them, trusting others may be induced to do likewise. First, then, What is an herbaceous plant? and the answer, in the broadest sense, is, Any plant which produces annual flowering stems from a perennial root, no matter whether that plant is a native of the hottest or coldest parts of the world, or indigenous to our own little isle. I merely mention this fact with a view to removing the erroneous notion from the minds of not a few that the term herbaceous is only applied to hardy plants. This, no doubt, has been brought about by constant use, as there is a much greater number of strictly herbaceous plants among hardy plants than in other groups. There are some who regard those plants which die to the ground annually as strictly herbaceous, these persons placing this construction upon the meaning of the word herbaceous—viz., "a plant which dies down and springs up again"—the dictionary rendering being this, "having a soft stem that dies to the root annually." My ideas may be more clearly defined by my supplying a few examples under the different heads.

Taking, then, the broadest view—viz., any plant producing annual flowering stems from a perennial root, we have a very wide field, embracing the whole array of hardy perennials, with bulbs included if not entirely, to a very great extent. But if we would take the second view, which runs thus—plants which die down and spring up again, the number of plants figuring under this head would be more limited. Among the foremost to be admitted would be Pæonies of the sinensis group, Phloxes of the decussata section; Delphiniums, Campanulas of the latifolia, Carpathian, pumila and turbinata sections; Michaelmas Daisies, Spiræas, such as digitata, palmata, Ulmaria, Aruncus, venusta, and so forth; Sunflowers, Thalictrums, Rudbeckia purpurea, Trollius, many Anemones, while the law that admits all these cannot shut out Narcissi Lilies, Alstromerias, Scillas, Orchises, Cypripediums, English and Spanish Irisis, and Erythroniums, any more than it can a Funkia or a St. Bruno's Lily. The question is undergoing a severe strain if in accepting the latter rendering we exclude, for example, such plants as Rudbeckia Newmani, Campanula persicifolia alba pl., Leucanthemum maximum, Spiræa filipendula fl. pl., Stenactis speciosa, Chelone barbata, Œnothera fruticosa, Achillea millefolia rosea, Tritomas, Pyrethrums (which in some cases lose all old leaves), Lychnis Viscaria splendens pl., and the typical Iris germanica, all of which do not die down entirely, but retain in a greater or less degree tufts of evergreen leaves. Going even farther, a friend of mine, well posted up in hardy plants, considered that Violas should be regarded as herbaceous during an argument upon the subject last year, and based his argument on the fact that the rootstock was perennial, and that the plant annually produced flowers. I did not agree with him, and for this reason, that by doing so we must of necessity admit Gentiana verna, G. acaulis, G. bavarica, and G. alpina, and by the same rule even Aubrietias, Drabas, Iberises, Armerias, and in short all alpines, but this was never intended to apply in such a form, since plants of diminutive growth are always considered as alpines; still there are instances where some few taller plants creep into the alpine ranks on account of the altitude at which they are usually found in their native habitats, and upon the same grounds may some bulbous plants—*e.g.*, Chionodoxa, be regarded as alpine.

Referring to the second question—"Do bulbs come under that designation?"—I should unhesitatingly reply, Yes the majority of them; indeed, I should only exclude from the ranks of true herbaceous plants those whose bulbs flower but once and die—that is, bulbs which are annually formed, and which after flowering perish. For an example of this take the Gladiolus; the corms or bulbs of these flower and perish annually, new ones being formed to perform the same function in their turn. Your correspondent appears to regard Lilium auratum out of place as a hardy herbaceous plant, yet I cannot see where else he would place it, and I imagine no plant can be nearer the mark than a Lilium, which flowers annually from a perennial root. It may be urged that Liliums form new scales inside the old ones annually; still this only causes an enlargement of the bulb, providing greater strength with

better spikes of bloom. In some other species this takes an elongated course, eventually forming a rhizome. In each instance the bulbs do not perish, but annually increase in size. This is the case with plants not bulbous, the rootstock or crowns composing them annually increase in number and in strength. I certainly think that the admission of bulbous plants would be within the meaning of the term herbaceous; at any rate, before such plants as Antirrhinums, hybrid Pentstemons, German Wallflowers, and Stocks, which frequently do service for hardy herbaceous flowers, and are awarded prizes too. I have frequently seen this in provincial shows, and can only suggest as a remedy that the framers of schedules omit the word herbaceous, and in its stead use the words "hardy border plants," or "hardy border perennials," with a brief explanation of the plants intended to figure in this particular class. Hard-and-fast lines are, however, by no means advisable, still the matter should be made as clear as possible for the guidance of exhibitors and judges alike. Disqualification upon this score should only be resorted to when the merits in other respects are equal.—J. H. E.

IMPRESSIONS AND OBSERVATIONS.

I AM asked if after reading the articles that have appeared on Potatoes, especially that of Mr. W. J. Murphy on page 39, I think the Potato disease is stamped out, or if it is conquered by the improved varieties. There have been disease-free years before 1887, and the murrain followed, and it will probably appear again when the conditions are favourable for the growth of the destructive fungus in the tissues of the plants.

A YEAR or two of immunity from the Potato murrain counts for little, since the existence of resting spores of the fungus (Peronospora) has been demonstrated by Mr. W. G. Smith, and I suspect no one knows how long they "rest." With a continuance of wet weather and a warm moist atmosphere for several weeks, the disease may be expected to recur, as in past times, and it is wise to expect it. It is well also to remember that in years when it was most virulent those varieties of upright growth with woody stems and thick-textured leaves were the least injured. It will be the same again when the disease appears; and those of prostrate habit, arresting evaporation from the sodden soil, and with flimsy leaves, will be the first to succumb.

WHEN fungus spores are present and fall on the leaves, the spores grow, and the mycelial threads penetrate the plant, and its destruction follows. It is possible that the cuticle of the leaves may be so stout as to have material resisting power, and I believe this is so. Even red spider first attacks the young soft leaves of Vine laterals, and mildew certainly does, making little or no impression on matured leaves, even though a vinery may be full of spores. The enemy also takes possession of the fruit in its early stage, seldom when advanced and the cuticle hardened. When mildew attacks Roses it makes the least impression on the matured leaves, the spores must fall on them, as on the young and more tender, else more vulnerable, and these are devoured by the enemy. Why, then, should not the stout leaves of Potatoes have the same mildew-resisting power? I am convinced they have, as the result of experiments, and everybody knows, or ought to know, that the leaves cannot be perfect in the absence of full exposure to light and air, and this they cannot have when the stems fall over, one overlapping the other, till what ought to be the best leaves are spoiled, only the younger and inferior remaining—precisely those that are most open to the inroads of the fungus when the spores are prevalent.

I HAVE known two seasons to elapse without seeing or hearing of anyone else seeing a diseased Potato in a great Potato-growing district; yet subsequently the murrain has appeared and become virulent. We must not be lulled in a feeling of false security because of one or two dry summers, and consequently clean Potato crops; but the same care should be exercised in the selection of varieties, and seed tubers with all their vitality intact, and in the preparation of the soil for inducing the best possible growth, as if an unfavourable season were expected; and especially as this is equally sound policy, let the weather be ever so good for the crops. Subjects cannot be exhaustively treated in these scratch notes, and now the theme must be left to others who may have something to say thereon, and I shall not in the least object to my upright-woody-stem-and-stout-foliage theory being opposed as of disease-resisting tendency, because I think it cannot be overturned without teaching me something that may be even more serviceable to others. By the way, is there not a mistake in 1843 being the "famine and total blight year"? 1845 was the year of the terrible outbreak of the Potato scourge. That is well within my recollection, though it is possible it may have visited Ireland a year or two sooner. Let Irish cultivators trust to nothing but their intelligence and persevering labour in the production of this, to them, vital crop, and they have a good guide and friend, as I know from more than one source, in Mr. W. J. Murphy.

"WHAT do you think about Mr. Goodacre's great sensation?" asks a correspondent who estimates himself as "A Humble Grower." That was in reference to the bunch of Gros Colman Grapes represented on page 67. It is the best bunch of Grapes I have seen figured, but not the best I have seen in the flesh. Mr. Goodacre has grown and shown both larger bunches and berries; so has Mr. Wm. Thomson at Clovenfords, and I believe I have seen Drumlanrig berries quite equal to the Elvaston "Sensation;" still there is no mistaking its high merit, and Mr. Goodacre deserves a mark of high commendation for the excellence of his work.

THERE is a hint in the notes of the cultivator worth bringing out a little more prominently relative to the importance of early thinning. It is not all persons who dare "commence thinning almost before the flowers expand," and there are instances where it would not be safe to do so, but it is certain that thousands of bunches of Grapes are left too long unthinned to the prejudice of the crops. Let anyone try, as I have tried, an experiment with a few bunches of Grapes, thinning one side at the first moment it is safe to do so, leaving the berries on the other side to press against each other before thinning, and the danger of needless delay in the work will be apparent before the season is half over.

IT is painful to me to see Grapes crushing against each other before the scissors are applied. "No time," says the six o'clock man. It is true other work may press and command attention between these magic hours; but then I have never seen a hard-and-fast six o'clock man excel in the culture of Grapes, and not as a rule in many other things. I have thinned Grapes from four o'clock in the morning till six, and from six at night till nine, times out of number. "Paid for overtime" does someone suggest? No, pay was not even thought about, good Grapes on the Vines being the coveted reward. Overtime pay is not allowed in many gardens. Shall, then, the Grapes spoil? No young man devoted to his calling would allow that if in his power to prevent it, but would rather rejoice in the opportunity of becoming an expert in the important work, that is so often slovenly done, of thinning them; but at the same time, when a little encouragement can be given it has a stimulating effect. I remember winning a prize for thinning Grapes before I was thirteen years old—the first and most cherished of my few gardening honours. Ten bunches each were to be thinned by three workers before 6 A.M., and though the prize was only a shilling the striving to excel was as great amongst all as if it had been a pound. I wonder if the hint will be taken by anyone interested in the gentle employment in question.

THOSE cogitations appear to lead to a few further observations on the "under gardener question," that has evidently been of interest to many readers. On the whole it must be admitted that the young writers of the several letters have acquitted themselves well. Though it is evident that some of them consider that much work is done for nothing, yet the general idea is that a kind word or act of recognition for honest effort and nightly labour is valued more highly than a small amount of money that might be given for the extra services rendered. Ladies and gentlemen of the highest rank frequently, if not commonly, thank their servants for many acts that are essentially duties, and grace is not lost in the giving on the one hand, while the recipients are made happier by the marks of approval thus considerately bestowed. Every servant worthy of the name who is thus kindly treated will strive to the utmost to increase the value of his services, head and under gardeners being no exception to the rule. Both in tone and style the letters referred to are creditable productions. Let the writers of them work with a will, cultivating the art of agreeable demeanour and expression, and the future of gardening will be safe in their keeping.

BY the way, I am not able to entirely agree with an observation of Mr. Goodacre to the effect that learning and laziness go hand in hand, and if that is what he means by his remark on page 112 I will cite himself against the accuracy of the dictum advanced. He may disclaim being a "learned" man; but even so, is he prepared to admit that if he were more ignorant he would be more industrious? I do not believe he would, and the best educated gardeners of my acquaintance have worked as hard with their hands as with their heads in making themselves what they are; and those who strive the most assiduously in both manual and mental exercise usually attain to the best positions in the gardening world when these are open to applicants in fair competition.

JUST as my pen was flowing smoothly and about to glide into another paragraph on a subject in mind, another letter comes. With a "bother the letters" it is torn open, and I soon see it is a case of "Goodacre again." It is not to the big Grape question, nor even to the brobdignagian Melon, that my attention is directed; but to the 16 oz. Royal George Peaches, mentioned on page 82. And what, kind readers, do you think I am requested to do? I am actually asked if I cannot "give him a wipe?" If my appellant will look in the dictionary I think he will find a variety of interpretations attached to the word "wipe," and if he will further suggest which of those he would prefer me to adopt the matter shall be considered. In the meantime I have not yet had the pleasure of seeing a Royal George Peach either 15 ozs. or 16 ozs. in weight, and if Mr. Goodacre or anyone else can send me one during the season I shall be glad to wipe my mouth with it, only stipulating there must be no mistake in the variety; and if Elruge Nectarines weighing 10 ozs. or 12 ozs. are also plentiful, perhaps one or two might be spared at the same time. If they should happen to be heavier they will not be objected to, but I do not expect to receive many. Now then, ye great growers, press on to the goal—Royal George Peaches 16 ozs. and Elruge Nectarines 12 ozs. in weight, and those who accomplish the feat, and afford me ocular demonstra-

tion of the fact, shall, so far as I can help in the matter, be enrolled in the list of worthies of 1888.

I HAVE been specially requested to turn my attention to the master-and-gardener-and-exhibiting question, but before doing so I am constrained to indulge in a few observations on my own account. I have a lurking suspicion that your plain-spoken correspondent, "Experientia docet," has at some time or other seen some of my letters; anyway he hits me rather hard. I will plead guilty to being one of the worst of writers to the Journal, and hereby acknowledge my obligations to the compositors who "set up" my copy so well. How they pick out the letters passes my comprehension. But they manage not only to do that but to correct the spelling and grammar; or at least somebody does, when there happen to be mistakes. I mention this as encouraging to would-be writers who hesitate in sending letters for publication because they are not perfect in all points. If they wait for perfection they will wait for a lifetime. Perfection is a Divine attribute. It may be approached but not attained; and there is only one way of approaching it—namely by practice, perseverance, and the elimination of faults. In the matter of writing editors do the eliminating. Sometimes they have been good enough to eliminate more than half of what I have written. In that way they become educators; and I could tell a story or two about pupils having profited by that form of teaching to an extent that would surprise the multitude. I have to be content with a humble position, but that is my own fault, and I ought to have made myself a better writer. By the way, in reference to your correspondent's signature, "Experientia docet," he may perhaps be amused to hear that it has been rendered into bothy English as "experience does it"—a practical translation, he will admit, though not literally exact.

THE exhibiting question must stand over, as I have found by experience that the longer my contributions are the longer they have to wait, and the shorter they are the sooner they appear, and I begin to fear, if I do not stop, my string of observations may be again crowded out altogether.—SPECTATOR.

Notes & Gleanings

EVENTS OF THE WEEK.—On Thursday, the 23rd inst., the Roya Society has a meeting at 4.30 P.M. The Quekett Club meets on Friday at 8 P.M.; the Royal Botanic Society on Saturday at 3.45 P.M.; the Royal Geographical Society on Monday at 8.30 P.M.; and the Society of Arts on Wednesday, the 27th inst., at 8 P.M. The usual auction sales will be held at King Street and Cheapside.

—— THE ROYAL HORTICULTURAL SOCIETY.—At a meeting of the Council of this Society, held last Tuesday, the resignations of Mr. William Lee and Mr. Sidney Courtauld were accepted, and the Council appointed Mr. T. B. Haywood and Mr. J. Woodbridge as their successors. The Rev. W. Wilks was chosen Secretary of the Society in place of Mr. Lee, resigned.

—— WE regret to learn that MR. A. H. SMEE was taken suddenly ill last Thursday morning, having ruptured some deep-seated muscles in his back, causing very acute pain. He has been confined to his bed since. Just as we are going to press we are glad to hear he is now progressing favourably.

—— AT the last meeting of the ROYAL HORTCULTURAL SOCIETY'S FRUIT COMMITTEE at South Kensington a silver Banksian medal was awarded to Messrs. T. Rivers & Son for the fine collection of Oranges, referred to in our report on page 126.

—— THE schedule of the SCOTTISH PRIMULA AND AURICULA SOCIETY is just to hand, and from it we learn that the Dowager Duchess of Athol has become the Patroness of the Society, with Robert Cathcart, Esq., Pitcairlie, Fifeshire, as President. The second Show will be held in the Calton Convening Rooms, Waterloo Place, Edinburgh, on May 9th this year, when prizes and certificates will be offered in twenty-two classes. As the result of last year's Show the Society has a favourable balance of £8.

—— THE WEATHER.—Mr. W. K. Woodcock writes from Sheffield, 'We are having very cold weather here now, wind E.N.E. Snow falling every day, and frost each night. The first real winter we have experienced this season." From Scotland "B. D." writes—"The week ending the 20th inst. has been wintry throughout. An average of about 7° of frost has been experienced nightly, except on one night 14°. The *Scotsman* contains a report of 4° below zero (!) on the grass on the night of the 14th at Aviemore, Strathspey. Only once have we had half that intensity during the winter in South Perthshire. Snow, varying from 2 inches to over a foot in depth, fell generally over the country on the night of the 16th, and still lies, though somewhat lessened by the bright sunshine." In the south and other parts of England much snow has fallen, but around the metropolis it soon melted, though the wind for several days has been exceedingly cold.

—— WRITING from Old Warden Park, Mr. G. R. Allis remarks—"From the 13th to the 19th inst. the WEATHER has been of a very stormy and winterly character. Snow has been falling more or less since the 13th inst., followed by 6° and 7° of frost on most nights, with a keen north-casterly wind. The ground is covered with snow from 6 inches to 8 inches deep, a good deal having melted as it fell. We have had about 12 inches altogether. Gardening and farming operations are at a standstill, consequently many labourers are thrown out of work; but the water produced by the snow will be beneficial to the land, as the springs are low and water scarce—so much so that some farmers have to cart water long distances for stock and household purposes; but this short supply will be accounted for when I mention that the rainfall for 1887 was only 16·76 inches—very much below the average rainfall; but in referring to the rainfall of 1884 I find it was even less, as then we only registered 16·74 inches."

—— PACKING FRUIT.—"W. H." writes:—"On reading your correspondent, 'R. W.'s,' criticisms upon Mr. Pettigrew's mode of packing mixed fruits, I could not find anything in what he had written to be of the least benefit to the readers of the Journal. It is to be regretted that he did not give some advice on the subject, which is of so much importance, and I think when anyone writes to condemn another's method he ought in justice to give his own."

—— WE are informed that MR. B. W. CLEAVE, NEWCOMBE HOUSE, CREDITON, who it may be remembered was the owner of the fine plants so successfully exhibited of late years by Mr. George Lock, died on February 3rd, and was buried amid every token of respect on February 8th. The deceased gentleman took great interest in his plants and flowers, and was extremely popular among all classes of society in the district.

—— THE ordinary fortnightly meeting of the WALKLEY (SHEFFIELD) AMATEUR FLORAL AND HORTICULTURAL SOCIETY held on Friday evening last proved more than ordinarily interesting. Mr. T. B. Hague (President of the Society) occupied the chair, and there was a large attendance of members. Mr. J. Shipman, a former Secretary of the Society, read a very instructive paper upon the "Florist's Tulip." By far the greatest interest of the meeting, however, was centred in the exhibits placed upon the tables, which were numerous and generally meritorious, but especially so in the case of those from Mr. W. Corp, manager to Mr. Duncan Gilmour, junr., Rose Grower, Sandygate, which comprised about fifty cut blooms of Tea Roses, beautifully fresh flowers artistically arranged with their own foliage and Maidenhair Fern fronds. The most conspicuous varieties were Catherine Mermet and its beautiful white sport, The Bride, several very fine blooms of each; also Sunset, Rubens, Marie Van Houtte, Madame Caroline Kuster, and Niphetos. Of the latter a grand flower more than 3 inches in depth and very full was shown, also a large box of cut blooms of Rhododendron Lady Alice Fitzwilliam, each flower being about 4 inches in diameter, very stout in texture, and of the purest white (these, as exhibited in a large Rose box, with a groundwork of dark green moss and relieved with fronds of Adiantum cuneatum, were highly effective), and a number of pots of the old double white Primula, well grown, and densely flowered. Several new members were enrolled, and a very enjoyable evening was spent.

—— HORTICULTURAL CLUB.—There was a large attendance of members at the annual dinner of this Club on Tuesday the 14th inst., when the chair was occupied by Mr. John Lee, and amongst those present were Dr. Hogg, Rev. W. Wilks, Messrs. J. D. T. Llewelyn, Crowley, Harry J. Veitch, W. Bull, H. Turner, H. J. Pearson, Chas. Pearson, H. Herbst, J. S. Cussens, C. T. Druery, George Deal, T. Francis Rivers, Geo. Bunyard, George Paul, A. F. Barron, and George

Nicholson. When the usual loyal toasts had been given by the Chairman, he proposed "Success to the Horticultural Club," and mentioned that it had been able, during the past year, to offer a place of meeting, not only to the National Rose Society, but to the Nursery and Seed Trade Protection Society, the National Dahlia Society, the National Carnation and Picotee Society, and the National Auricula Society, and had thus shown its value to the horticultural world in general. The Secretary, in responding, announced that the Committee had that day voted a donation to the Gardeners' Orphanage Fund, as they had done some years ago to the Gardeners' Benevolent Institution. The toast of the "Royal Horticultural Society" was responded to by Mr. Harry Veitch; the "Horticultural Press" by Dr. Hogg; and the "Visitors" by Mr. Barron and Mr. Nicholson. Some magnificent bunches of Gros Colman Grape were kindly sent by Mr. Thomson of Clovenfords, and some beautifully coloured Apples by Messrs. Rivers and Geo. Bunyard, the former also contributing a dish of fine samples of Knight's Monarch Pear. A very pleasant and agreeable evening was spent, and hearty wishes expressed for the prosperity of the Club.

—— GARDENING APPOINTMENT.—Mr. Robert Titterington, late foreman at Dallam Tower gardens, Westmoreland, has been appointed head gardener to H. T. Welsh, Esq., Leck Hall, Kirkby Lonsdale, Westmoreland, in place of the much-respected Mr. F. B. Brookes, deceased.

—— WE learn that MR. T. W. HELLIWELL, 5, WESTMINSTER CHAMBERS, LONDON, S.W., has been awarded the gold medal from the Jubilee of Railways Exhibition at Paris, 1887, for his patent system of glazing.

—— MR. H. SWIFT, Balrath Burry, Kells, Co. Meath, sends us some fine flowers of FREESIA REFRACTA ALBA, five and six to a scape and extremely fragrant. Our correspondent remarks that "They have been grown on the shelf in a cool house near the glass, only keeping the frost out. I have thirty pots of them and they are much admired."

—— GARDEN LITERATURE AND ART.—"From the very earliest times," writes Mr. F. W. Burbidge in "Harper's Magazine," we find gardening illumined and directed by the pen. Bacon's celebrated essay 'On Gardens' will recur to those interested, and George Herbert, the divine, quaintly tells us that 'of gardening and building no man knoweth the cost"—a shrewd observation which is likely to find an echo in the experience of many who have ventured on either pursuit. I have purposely avoided many allusions to ancient or what are properly called classical authors, but I cannot resist pointing out the fact that some of our most successful writers of to-day, and of those whose works are read in these pages, are literally and truly gardeners. Who has not lingered over 'Christowell,' by R. D. Blackmore, who Virgil-like, devotes much of his time to his fruit trees at Twickenham? And have we not noted the true instinct of fruit and flower culture in 'Nature's Serial Story' and in the 'Home Acre,' by Mr. E. P. Roe, or laughed at Charles Dudley Warner's 'My Summer in a Garden?" Even the artists share the fate of the writers, and become bond-servants to Flora. I have never seen Mr. W. H. Gibson's garden, but I am quite sure he has a good one, for it is only true and practical gardeners who can draw leaves and petals as he and Mr. Alfred Parsons do draw them. Everyone fond of flowers and gardens should read Alphonse Karr's 'Tour Round My Garden:' also 'Days and Hours in a Garden,' by Mrs. Boyle (E.V.B.); and every work written by the late Mrs. J. H. Ewing is alive with sympathy for garden blossoms, as is also a little volume entitled 'The Six of Spades,' a book about the garden and the gardener, by the Rev. Reynolds Hole, the genial pastor and rosarian, who formulated the aphorism that 'he who would grow beautiful Roses in his garden must first of all have beautiful Roses in his heart.' Charles Kingsley had a charming little garden near the Pine trees at Eversley, and both he and his brother, Henry Kingsley, the novelist, always wrote feelingly on floriculture. There is scarcely a single work of John Ruskin's that does not enlighten us as to the exquisite fitness and grace of vegetation, and in his 'Proserpina; or, a Study of Wayside Flowers,' there are minute studies and much subtle reasoning as to their anatomy and nomenclature."

—— WE referred briefly to the annual meeting of the UNITED HORTICULTURAL PROVIDENT AND BENEFIT SOCIETY LAST WEEK. Notwithstanding its unwieldy name this institution has done, is doing, will do much good to those gardeners who belong to it, or to their representatives. The Society is strong and gaining in strength yearly, and so it will continue to do with a steady accretion of new members. The sum invested in consols is now £4000. Though the claims of the benefit fund have been heavy, amounting to upwards of £60, the fund has increased in round figures from £2482 to £2879 during the year. There have been no claims on the benevolent fund, which has risen from £1092 to £1183. The management fund shows a balance of £19 over expenditure, but the outlay is quite insufficient for keeping the advantages of the Society before the public. This fund is inadequate for the important work of extension; the benevolent fund in excess of requirements; and if half the contributions of honorary members could be turned to the management fund and more business enterprise displayed the Society might become a great national institution. It would have remained almost stationary but for the efforts of outside friends, yet, if we are correctly informed, even press invitations were not issued for the meeting. In answer to inquiries we give the address of the Secretary—Mr. W. Collins, 5, Martinhoe Terrace, Martindale Road, Balham, London, S.W.

—— MR. W. J. MURPHY, Clonmel, in referring to remarks which have appeared concerning CARTER'S STRATAGEM PEA, observes that he has found it "one of the best Peas ever issued. If grown in firm ground, even though tolerably rich, it will not exceed 3 feet high; and if for exhibition, where size is imperative, thinning both side stems and extra fruiting flowers is desirable. Surely Mr. Swan (page 132) does not mean to say he can grow the splendid specimens he describes, 'with forty pods to a plant, and from eight to ten peas in each, having his plants in rows only 6 inches between the rows?' This Pea is an immense favourite with birds and vermin, so when wanted early I would recommend Mr. Garner to try starting in shallow zinc trays and then lift into the future drills. Fresh manure should be avoided."

—— THE monthly meeting of BELGIAN HORTICULTURISTS was held in Ghent on the 16th inst., when the following were present:—Messrs. V. Cuvelier, Boelens, Ch. Spae, Edm. Story, Jules Hye, Emile de Cock, and A. Wallern, M. Laurent Masereel presiding, and M. Gustave Van Eeckhaute was Secretary. Certificates were awarded to M. Ad. D'Haene for Oncidium splendidum, to M. Ed. Pynaert for Cypripedium Dauthieri marmoratum, to M. J. Hye-Leysen for Cattleya Trianæ varieties, Odontoglossum coronarium, and Cypripedium Van Houttei (see page 146), to MM. Vervaet et Cie. for three varieties of Cattleya Trianæ. Honourable mention was also accorded to M. Ad. D'Haene for Cattleya Trianæ varieties, to M. Jules Hye-Leysen for Cypripedium Spicerianum magnificum, Lycaste Skinneri alba, and Cypripedium Argus; also to MM. Vervaet & Cie. for Cypripedium vernixium and Odontoglossum Wilckeanum. A cultural commendation was awarded to M. Jules Hye-Leysen for Cypripedium Boxalli, and a wish was expressed that Mr. James Bray would show his plant of Cattleya Trianæ alba at the next meeting.

—— RELATIVE to the report of the LIVERPOOL HORTICULTURAL ASSOCIATION, supplied by "A Committeeman," and published on page 112, Mr. W. Bardney writes:—"When condensed reports are issued from official sources we naturally expect them to be correct. It is clear that 'A Committeeman' was in too great a hurry to amend the previous report (page 4); it would have been better if before doing so he had obtained the facts necessary to render his addition an accurate one. If he asks the Secretary (Mr. Bridge) for a copy of the resolution I proposed and handed to the Chairman, he will then be in a position to detect the error into which he has fallen, and thus make the necessary correction."

—— A NOBLE CAMELLIA.—A correspondent writes—"A magnificent plant of the old Camellia japonica alba plena, probably the largest in the kingdom, is thriving under the care of Mr. Toft at Eddisbury, West Derby, Liverpool, the residence of J. Latham, Esq. It is one of those imported by Burton & Higginson from China, and bought and planted in its present position by Edward Porter, Esq., then Mayor of Liverpool. The circumference of its main stem is 2 feet 7 inches, and the diameter and height of the tree is not less than 20 feet; indeed, had the house (already enlarged) been made larger the dimensions of the tree would also be greater. I noticed in a contemporary some time ago a correspondent recording the return in one year from a very large Camellia as £20. I am informed that the above plant has yielded in one year more than treble this amount."

—— "H. C." sends us flowers of some uncommonly fine CINERARIAS, evidently of a good strain and well grown. The flowers are rich and varied in colour, some being of great size, nearly 3 inches in diameter, the florets over an inch broad. Our correspondent states that "out of 100 plants grown from seed supplied by Messrs. Sutton & Sons not one is of indifferent quality."

—— THE LIVERPOOL CHRYSANTHEMUM SHOW is to be held on November 21st and 22nd, and Lindfield (Sussex) on November 15th and 16th.

ROYAL HORTICULTURAL SOCIETY.

FEBRUARY 14TH.

SCIENTIFIC COMMITTEE.—Present: Mr. F. Paseoe, in the chair; Messrs. Murray, Wilson, O'Brien, Ridley, Miehael, Smee, Bennett, Smith, Boulger, Morris, Dr. Lowe, and Rev. G. Henslow, Hon. Secretary.

Orchids.—Mr. O'Brien remarked on a so-called Masdevallia eulex, but whieh is really Pleurothallis Barberiana, bearing minute delieate flowers. A Dendrobium Kingianum, var. albidum, was also exhibited. The inflorescenee bore eighteen flowers. The original speeimen, figured in the "Botaniеal Magazine," 1845, No. 61, bears pink flowers, and in the deseription two only are said to have then been the average number. It is refigured in 1850 in the "Botaniеal Magazine," No. 4527.

Ponthieva, Drawing of.—Mr. Ridley showed a drawing of this genus by Lehmann, from Eeuador, whieh was figured and described in the *Gardeners' Chroniele.*

Wallflower, Monstrous.—Mr. Henslow reported upon the speeimens exhibited by Mr. Lyneh at the last meeting, known as "Miss Hope's." They were not gynantherous, but a form of "double" flowers. The ealyx was normal, but contained more or less than ten petals, that is to say, the usual four, and six others representing the stamens. Instead of a pistil, the axis was prolonged, and terminated with a double flower, having a normal ealyx, but a eorolla of an indefinite mass of petals. This case, therefore, resembled the double form of Helianthemum vulgare, only in that flower the ealx and eorolla are repeated three or four times.

Æeidium pseudo-columnare (J. Kühn).—At the last meeting of the Seientifie Committee some specimens of the Silver Fir were exhibited whieh showed the injury done to the extreme tips of their branehes by an Æeidium. Having in my herbarium some speeimens of the fungus in question whieh Mr. Munro had sent me some years ago, I submitted them to Professor Julius Kühn, with the request that he would examine them and report whether they were the true Æeidium eolumnare of Albertini and Schweinitz, whieh has its teleutospores of Vaeeinium Vitis-idæa as Calyptospora Gœppertiana, or whether they were the reeently deseribed Æeidium pseudo-eolumnare into whose life eyele the Calyptospora does not enter. Professor Kühn in reply says, that they belong to his Æeidium pseudo-eolumnare, a fungus whieh has not previously been recorded as British.—*Charles B. Plowright.*

Honey from Eucalyptus globulus.—A speeimen had been sent from Adelaide, South Australia, to Mr. T. Christy, as possessing similar properties to those of the tree itself; being, for example, antiseptie in its nature. It is found to be very efficaeious in eases of lung disease. The honey ean only be procured every other year, as the tree flowers bienially. One peculiarity is that, though liquid on arrival, it rapidly erystallises in this elimate. It has a very peculiar flavour and seent.

"*Jambul,*" *Eugenia Jambolana.*—Mr. T. Christy sent a growing plant as well as seeds of this important drug. Its peeuliarity resides in the power of its seeds to arrest the eonversion of stareh into sugar; henee its value in diabetes. The seed appears to eontain about 31·4 per eent. of oil and 4·32 per eent. of ash; also yellow-green resin and a erystalline prineiple are present. Experiments with stareh and malt extraet, with and without jambul, showed that while 22·4 grains were eonverted into sugar where no jambul was present, only 9·8 grains were charged with 15 grains of the seed; and 6·3 grains of stareh beeame sugar with 25 grains of jambul. It is now used very extensively in Ameriea and Germany, and has begun to be employed in England apparently with very beneficial results. From a preliminary analysis, the seed does not appear to eontain any starch, and therefore the question arises whether the particular ferment which emulsivises oils in seeds may not generally have a sort of anti-diastatie aetion. Further details will be found in No. 10 of *Med. Com. Pl. and Drugs,* by Mr. Christy.

Oranges, Cultivation of, in England.—Mr. T. Christy contributed the following remarks upon Orange growing:—"In diseussing the question of Orange growing in this eountry with Dr. Amadeus he tells me how mueh has been done by grafting in Porto Rico. He reeom mends the graft to be made on the strong stems, and the plants do so mueh better when not grafted too young. With regard to the transport of the fruit, he believes that the sixteen days' sea journey will be fatal to the quality and flavour of the thin-skinned Oranges, so that it would be better to send some eases of plants of the best varieties for growth in houses here. Sinee the reeeipt of the large shipment from Bahia many growers have bought stoek of the Orange trees, with the view of so doing, and some eorrespondents have already eontributed some very interesting information, showing how well the eulture is understood (see eommunieations from Mr. Jas. Douglas and 'M. F.,' *Gardeners' Chroniele,* vol. iii., January 14, 1888, pp. 46, 47), and it only remains for the eommereial question to be threshed out. One grower informed me that he got so much juiee in his fruit that it burst in ripening; so this faet sets at rest the question of hard 'woody fruits' only being produced in this country. Mr. H. Dixon, of Cherkley Court, Leatherhead, has two Orange trees, eaeh bearing more than 200 fruits; and from his Pomeloes he says that he is able to make a delicious preserve. With regard to foreign fruit, a eaptain in the Mediterranean trade tells me that from his experienee in eollecting Oranges from most parts of the world where they are grown, he believes the palm for delicately flavoured varieties must be awarded to those from Malta. This he attributes to the great eare bestowed in their eultivation. When attending the display of fruit at the Agrieultural Show in Paris every year, I have been struek with the fine exhibitions of these fruits, together with Citrons and Limes from Algeria; and I was informed that the Freneh Government obtained thence the best varieties for their botaniеal gardens, and that the trees were in full bearing."

A fine series of home-grown Oranges, Lemons, Citrons, and kindred fruits was exhibited by Mr. Rivers, who has eultivated them for the last twenty years. Mr. Miehael eorroborated the difficulty of importing Oranges from Bahia—one of the best Orange-growing distriets.

Rhododendron Hybrids.—A series was exhibited by Mr. Veiteh at the exhibition as follows:—R. Imogene, between R. Teysmanni, male (pure yellow), with R. Taylori (red), itself a hybrid. It retained the foliage of the male, the blossoms being pale lemon-eoloured, tinged with red in the filaments and anthers alone. The red tint was thus almost entirely eliminated. R. Ruby.—This is a eross between R. jasminiflorum, R. earminatum (erimson, female), with R. multieolor, var. Curtisi (male)—this being a erimson variety of the normally lemon-eoloured R. multieolor—both parents being red, the offspring was ruby-eoloured. Two effeets gained were a dwarfer habit and a freer blooming. R. (unnamed).—A hybrid between R. Monareh (salmon-eoloured, female), and R. malayanum (pale erimson, male). The influenee of the male overpowers the female, as there is no salmon eolour in the hybrid, though it has the habit of the male with an inerease in the number of flowers. R. (white, unnamed).—A eross between R. Prineess Beatrice (rosy-pink), and R. multieolor (lemon). In this ease the union of two eolours eaused the total disappearanee of both, the result being a pure white.

IRIS SUSIANA.

IT is not everybody who ean grow this "Guinea Hen" Iris, imported 300 years ago from Susa, one of the towns in Persia, although it is now very eheap, and may be bought by the dozen or the hundred at a low rate. I knew a lady very fond of flowers who knew little or nothing of Iris, but she read in a gardening paper that they were as fine as tropical Orehids, and that anybody could grow them anywhere. So she went to a bulb shop and told the man behind the eounter that she wanted the best Iris he had. The bulb man reeommended her English, Spanish, and German galore, but said he, drawing a few nubbly brown roots out of a bag, "This is a very rare and beautiful thing, I can strongly reeommend this." It was ineluded, and home went the lady full of hopes for the future. "John," who is groom and poultry keeper, swineherd, and gardener in ehief, was summoned, and he, good man, being always busy, dug holes anywhere among the bushes, and in went the Iris. Holes and earth were all they had, and away he went to his pigs and Cabbages.

An anxious eye was east on the roots by their owner from time to time, and one morning the lady saw something like a speckled ehicken fluttering among the leaves, and on looking closer she found a flower—the Iris Susiana was in bloom. Imagine her delight, you who have struggled with this Iris as earnestly as Charles Dudley Warner struggled with the "pussley" weed in his garden. But the lady was not delighted; she loved Pansies and Roses, or any flowers with a sweet smell and a bit of eolour about them, but this ugly spotted thing fluttering in the sunny breeze she did not like at all. "The dirty, ragged-looking thing," said she, "why talk about Orehids; this 'lovely Susan,' as the man ealled it, is the eolour of a well-worn hearth brush, and smells like bad Mushrooms." "There's more of the sooty brute," said she, as another flower or two eaught her eye among the bushes. Then she ealled "John" from the stables and showed the flowers to him, and spoke her mind. "Yes'm," said John, "the—the thing eertainly is a bit sooty-lookin', and they do smell of Toadstools surely." But then a lueky thought jumped into her mind, and she wrenched off leaves and flowers together and drove into town to see the seedsman. "Why did you sell me this dirty stinking thing?" she said; "looks like an Orehid, doesn't it?" she gasped in her anger. "Madam," said the shopman, "you surprise me. We have sold a great many of this Susiana, but we never saw it in flower before. Believe me, your exeellent eulture has worked wonders! Pardon me," he said, as she was about to ask if his senses had left him, "Pardon me! I'll eall the proprietor."

The shopmen eame round her and gazed at the flowers, and just as she was doubting their sanity, the proprietor appeared—florid, white-haired, dignified, and bland. "My foreman informs me, Madame," said he, with a bow, "that your gardener has sueeeeded in blooming the rare and beautiful Iris Susiana, and that you have been so kind as to bring us the flowers. They are most handsome!" he ejaculated, as he saw a sort of lax and helpless look in her faee. "Most handsome!" ejaculated the shopmen in a ehorus. "And I hope," said the big man, "you will do us the honour to allow your beautiful flowers to be plaeed in water and exhibited in our window; for, believe me, such handsome blossoms have never been produeed before." Not quite eonvinced as to the "most handsome," she resigned the flowers, and for days they were the talk and wonder of the town. People bloeked the pathway in front of the window, and even a poliеeman went over to see "what was up," and

stayed to admire. A paragraph appeared in the papers, and a good many people wrote (to the lady) asking for roots of her wonderful Iris. When the English and Spanish Iris bloomed she felt delighted; and she still wonders why these really lovely kinds go unregarded in comparison with the admiration lavished on the "smutty looking Susan," as John called it—which was so much admired in the town.—F. W. BURBIDGE.



MARECHAL NIEL ROSE.

IN reading an article on the forcing of the above variety in the Journal by your correspondent, "N.," page 107, I was somewhat surprised at the following remarks—"Keep the temperature of the house from 50° to 55°, as if forced out in strong heat the flower stems come weak and the flowers colourless. Give no ventilation in the early stages of growth, in fact not before April, as the cold air checks their progress and produces that dreaded pest, mildew." Your correspondent may be experienced in the cultivation of Roses, and keeping the ventilators closed until April may be one of the secrets of his success and a preventive of mildew, but I must admit that it is quite an innovation to my mind, and so far contrary to my experience, and I should require the above recommendation endorsed by some well-known rosarian before I ventured to adopt it.

I beg to ask "N." what aspect he would recommend for a forcing house for Maréchal Niel Roses, so that the temperature could be kept below 55° to the end of March with the ventilators closed.

I had occasion very recently to visit the gardens of J. C. Reid, Esq., Lady Wood Villas, Roundhay, one of the prettiest suburbs of Leeds, and had the pleasure of inspecting the largest Maréchal Niel Rose tree that has ever come under my notice. From a conversation I had with Mr. Beaumont, the gardener, I ascertained that the tree was planted some ten or twelve years ago in a span-roofed greenhouse, 28 feet by 12, in the natural soil of the garden. It is budded on a Briar stock 4 feet high, the stem now in the thickest part measuring 12 inches in circumference; it is trained to the roof, which it nearly covers. The house is heated by one 4-inch pipe round to exclude the frost in winter when the house is stored with bedding and other plants. It has evidently grown remarkably strong when young and been allowed its own way; in fact, from its appearance I should say it has grown almost wild, but flowering so profusely the last few years has reduced its robustness. It produced last year over 2000 blooms. It makes sturdy growths from 12 to 18 inches long, and flowers from almost every joint. It is at present in perfect health, and the young growths are 3 or 4 inches long with buds at nearly every point. Air is admitted freely, the gardener informs me, for the purpose of preventing that dreaded pest mildew, and when I read the article by "N." I became puzzled on the question between the two Rose-growers, and no wonder, one recommending giving all the air possible for the prevention of mildew, and the other keeping the ventilators closed, in fact, until April as a preventive. I forgot to mention that no attempt is made to force the remarkable specimen above alluded to—that may possibly constitute the difference. I should be glad to have the opinion of some of your eminent Rose-growers through the columns of the Journal on this perplexing difficulty.—L. T.

ROSE GRACE DARLING.

ON reading the "Rosarian's Year Book" for 1888, page 36, I found in a chapter on decorative Roses, by Mr. T. W. Girdlestone, the following concerning Grace Darling:—"The exquisite Grace Darling (which must regretfully be admitted to be a Hybrid Tea—that is to say, for exhibition purposes a Hybrid Perpetual)." I believe Mr. Girdlestone is a member of the General Committee of the N.R.S. On reading page 34 of the National Rose Society's schedule for 1887 I read thus:—"A tentative list of a few Roses which the Committee suggests should be ultimately added to the Society's catalogue of exhibition Roses." Then comes a list of H.P. Roses, and then "Teas and Noisettes, Grace Darling, &c." I believe Grace Darling was raised by Mr. Bennett, but I do not know its parentage. I am very anxious to know for my own sake and that of other rosarians whether it is a fact that Grace Darling is to be exhibited as a Hybrid Perpetual or as a Tea Rose. I have asked this question, thinking some young rosarians may be as ignorant as myself.—HENRY V. MACHIN.

NEW FRENCH ROSES.

(*Continued from page 108.*)

IN continuation of my remarks upon the new French Roses, we next come to the Hybrid Perpetuals.

SCHWARTZ, VEUVE.

AUGUSTE PERRIN.—Bright cherry red, shaded amaranth.

MORPHÉE.—Flowers globular, bright velvety crimson, shaded bluish purple.

PERNET, PÈRE.

ALBERT LA BLOTAIS.—Flowers globular, nearly full bright red, passing to crimson.

FRANÇOIS DAVID.—Bright red shaded with crimson and violet.

MONSIEUR CHEVALIER.—Flowers nearly full cherry red, tinted lilac.

EUGÈNE VERDIER.

DUC D'ANDRIFFET PASQUIER.—Purplish carmine red, with brighter centre.

DUCHESSE DE GALLIERA.—Flowers globular, of a very fresh bright carmine red.

L'AMI LOURY.—Scarlet crimson shaded with purple and cream; rich velvety texture.

SCIPION COCHET.—Flowers of moderate size, velvety maroon, shaded with brilliant scarlet crimson.

C. VERDIER, FILS.

JAMES BOUGAULT.—A sport from Auguste Mie with white flowers.

MONSIEUR JOURDAN.—Flowers brilliant crimson red; plant very vigorous.

LEVÊQUE.

DIRECTEUR TYSSERAND.—Bright carmine red.

MADAME HEINE-FURTADO.—Flowers globular, bright rose, shaded lilac.

MARQUIS D'ALIGRE.—Vermilion shaded with brown and deep scarlet.

REINE ISABELLE II.—Flowers imbricated, soft and tender, flesh colour.

SOPHRIE STERN.—Flowers globular, bright carmine rose red.

GESHWIND.

CEULE SCHARSACH.—Flesh white, passing to white.

NABONNAND.

BARDOU JOB.—Flowers semi-double, velvety scarlet, shaded black, semi-double; a seedling from Gloire de Rosamène.

ROI FRANÇOIS D'ASSIZE D'ESPAGNE.—Imbricated, very deep scarlet shaded with purple.

MOREAU-ROBERT.

CHARLOTTE WALTER.—Flowers cupped; bright shaded rose colour.

KATKOFF.—Flowers imbricated; bright cherry carmine.

LIABAUD.

MADAME ALPHONSE SEUX.—Delicate rose colour, sometimes brighter.

MADAME RICHAUX.—Tender satiny rose.

MONSIEUR NIGARET.—Brilliant amaranth red with purple centre; very vigorous.

PIERRE LIABAUD.—Velvety purple.

SOUPERT ET NOTTING.

CONSEILLER STOCKER, T.—Moderate size; imbricated petals satiny rose; very free flowering.

PRINCE CHARLES D'AREMBERG.—Large petalled satiny rose flower.

MARGOTTIN, PÈRE.

GLOIRE DE MARGOTTIN.—Flowers of moderate size, nearly full; very bright cherry rose.

GONOD.

LOUIS DONADINE.—Dark velvety maroon, shaded crimson; blooms freely in autumn.

SUSANNE CHAVAGNON.—Bright rose-coloured flowers with thick petals; seedling from Baroness Rothschild.

DUBREUIL.

LOUIS LILLE.—Cupped, bright red; between Baroness Rothschild and Firebrand.

BERNAIX.

MADAME CÆSAR BERNAIX.—Medium size; flowers bright china rose.

SOUVENIR DE MADAME FAURE.—Crimson, shaded with rich deep velvety purple.

VIGNERON.

MADAME DE TERROUENNE.—Flowers globular; carnation red a seedling from Jules Margottin.

There are a number of other Roses, Hybrid Teas, Polyantha, Bourbon, &c., but we have been year after year supplied with plenty of these, and with little good results, so I leave them on one side. There is one Rose for which we shall look with interest—a product of Rosa rugosa—Madame C. Bruant, raised by Bruant from rugosa fertilised with Sombreuil—it may indicate a new break. In looking through the list that I have given, there does not seem much to excite our curiosity. It is remarkable how many of the Teas are high-coloured—suggesting perhaps that they are not altogether pure—and, indeed, with the exception of the two sent out by Lacharme and Guillot fils, there does not seem to be anything tempting. Amongst Hybrid Perpetuals nothing strikes me as being novel or out of the ordinary run—but it is all a lottery ; descriptions avail but little, raisers' names more ; and it is most probable that amongst those sent out by the Widow Schwartz, Liabaud, C. Verdier, and Margottin we shall find the gems we are seeking for, but I shall be very much surprised if we do not find, after all, that the gems are nearer home, and that in such flowers as Earl of Dufferin, and Sir Rowland Hill, we shall find flowers that exceed in beauty and novelty those of our French friends.—D., *Deal.*

ROYAL METEOROLOGICAL SOCIETY.

The monthly meeting of this Society was held on Wednesday evening, the 15th instant, at the Institution of Civil Engineers, 25, Great George Street, Westminster, Dr. W. Marcet, F.R.S., President, in the chair.

Mr. T. S. Ainge, Mr. J. C. Bell, F.R.G.S., Mr. C. A. Markham, Surgeon-Major S. Smith, Mr. J. T. Tibbles, and Dr. J. Walther were elected Fellows of the Society.

The following papers were read :—

1, "Electrical and Meteorological Observations on the Peak of Teneriffe," by the Hon. Ralph Abercromby, F.R.Met.Soc. The author made a trip to the Island of Teneriffe in October, 1887, for the purpose of making some electrical and meteorological observations, and now gives some of the results which he obtained, which may be summarised as follows :—The electrical condition of the Peak of Teneriffe was found to be the same as in every other part of the world. The potential was moderately positive from 100 to 150 volts at 5 feet 5 inches from the ground, even at considerable altitudes ; but the tension rose to 549 volts on the summit of the peak, 12,200 feet ; and to 247 volts on the top of the rock of Gayga, 7100 feet. A large number of halos were seen associated with local showers and cloud masses. The necessary ice-dust appeared to be formed by rising currents. The shadow of the peak was seen projected against the sky at sunset. The idea of a south-west current flowing directly over the north-east trade was found to be erroneous. There was always a regular vertical succession of air currents in intermediate directions at different levels from the surface upwards, so that the air was always circulating on a complicated screw system.

2, "Rainfall of South Africa, 1842-86," by Mr. W. B. Tripp, M.Inst.C.E., F.R.Met.Soc. The author gives the rainfall statistics from all those stations situated in South Africa which possess records of ten complete years and upwards. He remarks upon the chronological succession of wet and dry years, and the consecutive years above and below the mean ; and also describes the seasonal distribution of monthly maxima, and the extent over which monthly rains prevail. He concludes by comparing the curves of rainfall with those of sunspot energy.

3, "Some Methods of Cloud Measurements," by Mr. Nils Ekholm. As exact cloud measurements afford almost the only easily available means of determining motions in the upper regions of the atmosphere, the author describes some methods which seem to him likely to give the best results. He also details the plans adopted at the Swedish Polar Station, Cap Thorsden, in Spitzbergen, and at the Upsala Observatory, for determining the direction and angular velocity of the clouds, and for making direct measurements of the height and absolute motions of the clouds.

THE BULB MITE.

Our good Journal is so full of the best advice upon all subjects pertaining to horticulture, that it is only upon a chance occasion that one like myself, with something less than an ordinary complement of talent, can venture to pen a few observations. For the present, however, my thoughts are fixed upon the Eucharis mite, so called, but whether or not it has any legitimate right to its title I have yet to learn. I prefer to call it the bulb mite, as it is certainly found among nearly all bulbous plants, more particularly Liliums, Pancratiums, Amaryllises, Vallotas, Hyacinths, &c.

Very much indeed has been written respecting the mite for several years past, with the result that the cry is more general than ever, "What can we do to get rid of it?" This was the subject of a lively discussion held by the members of the Preston and Fulwood Horticultural Society on Saturday evening, February 4th ; and the latest remedy I have heard, and possibly the only one open to us, is to get rid of it in the best way we can, and the sooner done the better. Good advice no doubt, but the most serviceable information is still wanting to carry out the above remedy. At the meeting referred to we had ample evidence of the existence of the mite, and no sane man would or could doubt it. The pest was exhibited by thousands upon Eucharises both in pots and out of pots, also upon Pancratiums ; and although much useful information was brought as to the best means of destroying it, I must confess we had to close the discussion feeling that the mite has the best of it.

I purpose asking one or two questions which I hope will receive the careful thought and consideration this important subject deserves, for very recently I have learned that many gardeners are almost at their wit's end through their fruitless endeavours to rid their plants of the mite. Some have thought their bulbs cured, when twelve months later they are affected as bad as before.

First, Does the mite come in the compost in which the bulbs are potted ? or is it the result of some check given to the plants, either by resting them in too low temperatures, or a few doses of cold water at the roots ?

Secondly, Is it possible that by a judicious system of culture we may not only arrest but entirely stamp out the mite ?

These are the points upon which I would like the opinion of some of my more enlightened brethren, and I venture to think that some good may result from a few plain inquiries. I will willingly give my thoughts upon the above question in a future note provided the subject is taken up in the right spirit.—Observer.

WINTER NOTES AT SYON HOUSE GARDENS.

Thousands of persons who during the summer months travel up and down the Thames between Kew and Richmond are familiar with the plain substantial quadangular building on the Middlesex side near Isleworth known as Syon House, one of the most famed of the Duke of Northumberland's residences in the south of England. The gigantic figure of a lion which stands out boldly on the top of the mansion is pointed to as an almost historical object that so long surmounted Northumberland House at Charing Cross, the verdant lawns and dense shrubberies are admired, and there the general interest terminates. For horticulturists, however, Syon House, its gardens and pleasure grounds, possess many attractions, and though May or June would be preferably chosen for a visit, yet it is surprising how much can be found that is worth noting even on a bleak and snowy day in February.

It often happens that establishments near at hand receive less frequent notices than those at a distance, and Syon is an example of what might be almost termed a species of neglect. The work there is carried out in such an unpretentious manner that it is only occasionally when some wanderer penetrates the mysterious wilds of Brentford, that we hear anything of the ducal garden, although in historical interest and for good all-round practice it is second to none in the metropolitan district. No attempt can now be made to relate its history, but for the benefit of some far away readers it may be as well to state a few facts connected with it. First, then, it may be said that when our energetic monarch, Henry VIII., demolished the monasteries, there was one such institution upon the ground now occupied by Syon which shared the same fate. After the estate had been bestowed upon several persons in succession, including one of the Dukes of Northumberland, it reverted to the Crown, and in Queen Mary's reign was partially restored to its former use. Early in the seventeenth century, however, it was conferred by James I. upon the ninth Earl of Northumberland, and in this family it has now remained ever since. At different times extensive improvements have been effected in the estate, which comprises over 200 acres, about sixty being laid out as gardens and pleasure grounds, but its horticultural interest commenced soon after the middle of the eighteenth century, at the time it was in the possession of Sir Hugh Smithson. The grounds are said to have been laid out and planted from designs furnished by "Capability" Brown, most of the larger specimens dating from that period, though considerable additions have been made since amongst the shrubs and choicer trees. Very rich indeed is the collection of trees and shrubs, and to some of these a few notes may be devoted.

THE PLEASURE GROUNDS.

Though the grounds are naturally level, rising in a gentle slope from the river, yet the most has been made of them by judicious planting and varying the surface as much as possible. The shrubbery walks furnish some delightful shady retreats in the summer ; and after spending half an hour or so in traversing these an idea would be formed that the grounds are much more extensive than is really the case. Some beautiful vistas of the river and the Royal gardens, with the great Palm house on the opposite side, are also obtained, the effect being heightened by clumps planted at irregular intervals near the banks, which seen at a distance seem to connect the Middlesex and Surrey shores, especially when the tide is low. Emerging on the open expanse in front of the mansion a beautiful prospect is afforded in the direction of Richmond, with the high ground towards the terrace, from which rises the elegant spire of St. Matthias' Church in the background, the Kew shrubberies, the old Deer Park, and the Thames in the foreground. When the trees are clothed in all the freshness of early summer foliage and glistening under an unclouded sun this is a delightful

spot to linger in, but a keen north-east wind whistling round our ears does not tempt to the indulgence of imagination in February. So hurrying on we note on the way the grand old Cedar of Lebanon, which was so successfully rescued a few years ago. This magnificent tree, which must be counted amongst the finest proportioned specimens in England, was disturbed in a storm and partially overturned, the roots being dragged up for a long distance and the branches on the opposite side touching the ground. By means of various mechanical contrivances it was, however, restored to its former position, and the lower branches are now supported near the stem by stout iron columns resting on concrete, so that there is little fear of a similar accident again befalling it. The roots were carefully relaid, and the tree does not appear in the least the worse for its partial collapse. On the banks of the lake, which by the way is a well designed piece of water, are specimens of another remarkable tree, the deciduous Cypress, Taxodium distichum, some of which are nearly 100 feet high, or approaching closely to

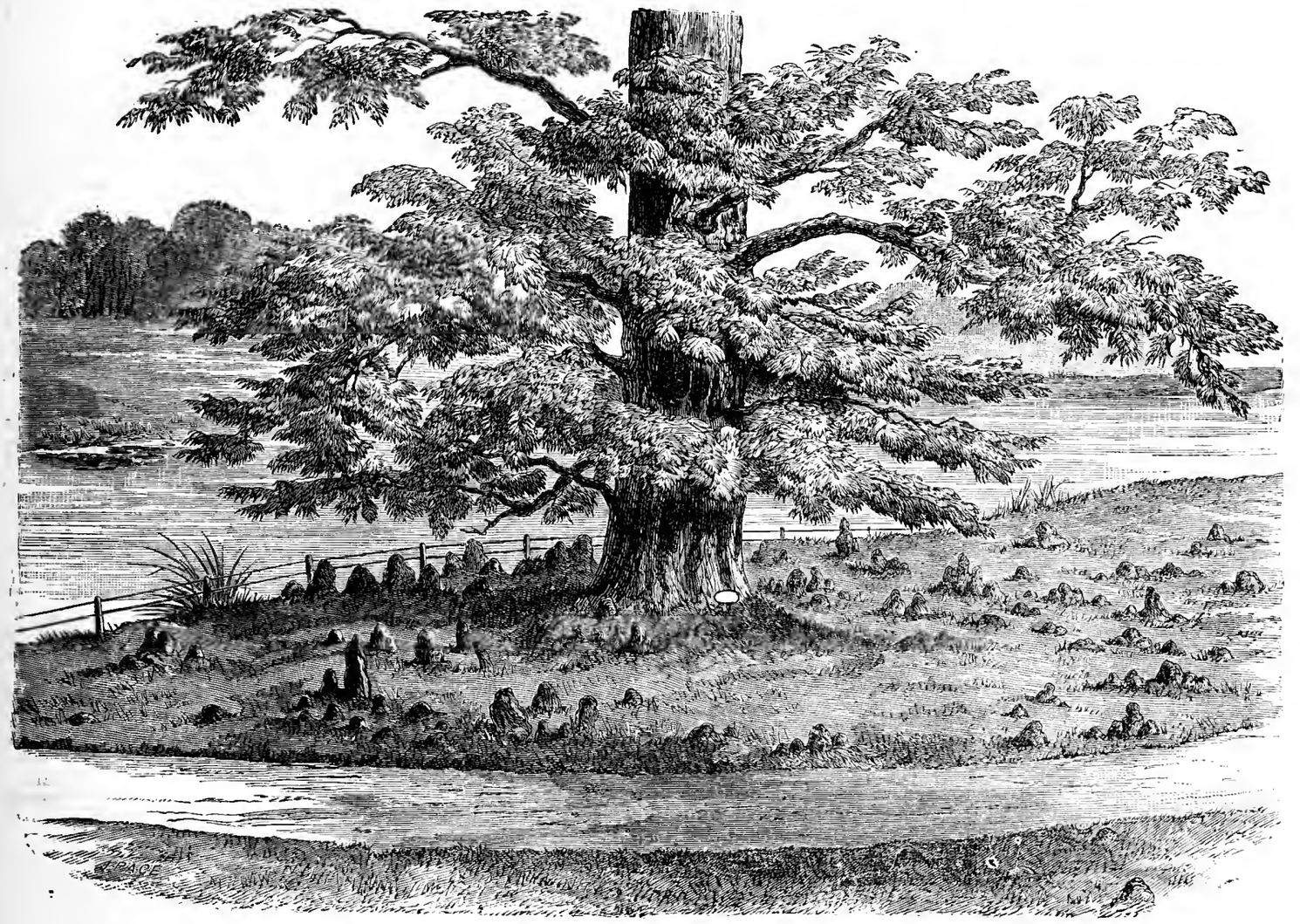


FIG. 20.—TAXODIUM DISTICHUM AT SYON HOUSE.

their full dimensions. Where it succeeds this is a graceful Conifer, the peculiar bright green foliage contrasting very markedly with the darker tint of evergreen trees, and though it looks bare in winter it is useful for planting in damp situations where few other Conifers thrive, and has a most refreshing appearance in the spring and summer. One peculiarity in this tree is admirably shown by a large specimen at Syon—namely, the production of "knees" from the roots extending to 60 feet from the stem. These protuberances, which exactly resemble the roots in structure, are mostly only a few inches above the soil, but in some cases they are said to rise 2 feet above the surface, and have been employed as bee hives in the Southern States of North America. It is somewhat curious that from these "knees" tap roots descend straight into the soil, as if shoots were to be produced, though this does not occur. In the engraving (fig. 20), kindly lent by Messrs. J. Veitch & Sons from their valuable "Manual of the Coniferæ," the peculiar "knee" characteristic of the Syon Taxodium is accurately represented.

A short distance from the conservatory is a fine example of the Cretan Maple, Acer creticum, about 40 feet high, with a wide spread of its light graceful branches. When in leaf this is a beautiful tree, and it forms one of the numerous attractions to tree lovers. Liquidambars are occasionally seen in gardens, but rarely of good size, and it is surprising that such handsome trees as these are in autumn, when their leaves are unequalled in rich tints of crimson, gold, and green, that they are not more frequently planted: at Syon are some good specimens 30, 40, and 50 feet high. Hosts of other trees might be mentioned, but an historical Mulberry must not be passed, for it is reputed to be one of the oldest in England, having been planted at the time these gardens were occupied by the Monastery already referred to. In the shrubberies are numberless fine Hollies 12 to 20 feet high, Ilex opaca, the distinct Ilex dipyrena, and the Highclere Holly being capitally represented. Huge bushes of Box, Laurels, and scores of rare shrubs are also seen, together with several exceptionally fine examples of the Snowdrop Tree, Halesia tetraptera, which frequently bear a profusion of pure white bell-like flowers. Of one rare shrub, Stuartia virginica, there is a fine bush that is generally regarded as rather tender, but which succeeds well there. It is a North American plant included in the Tea family, and its large handsome white flowers are somewhat suggestive of a single Camellia. It was first introduced to this country in 1742, and in "Andrews' Botanists' Repository" (t. 397), an excellent figure was given of the plant which had then just flowered. Another beautiful shrub, S. pentagyna, is similar in characters to S. virginica, both preferring moist situations. A handsome well-proportioned pair of the deciduous spring flowering Magnolia, M. conspicua, stand in the flower garden in front of the conservatory, one each side of a central walk, and every year these are covered with flowers, forming two extremely beautiful objects.

THE CONSERVATORY.

The conservatory is an imposing but rather heavy structure, and like the mansion is built of Bath stone. It is 380 feet long, of crescent form, with two wings and a central dome 60 feet high. In front is the flower garden of semicircular shape, with numerous simple beds and marginal rows of standard Roses. The wings and

connecting divisions of the conservatory are filled with Ferns, Palms, and miscellaneous decorative plants, the central octagon containing the principal plants of interest. One of the most remarkable of these is Bambusa arundinacea planted out in a large bed, and so vigorously has it grown that it now forms quite a tropical forest, twenty huge stems 6 to 9 inches in diameter rising to the roof and almost filling the dome with their leaves and branchlets. A gigantic specimen of Cereus hexagonus is also secured to one of the columns, and has several stems nearly 60 feet high. An old trunk of the Date Palm, Phœnix dactylifera, having reached the roof has been beheaded, and though now bearing no leaves it is retained as a curiosity. At the base of the stem is a large conical mass of roots or fibres, and several feet above this is another globular mass of a similar character, imparting a strange appearance to the stem. The Guava, Monstera deliciosa, and other tropical fruit-bearing plants are grown in the same house with a fine specimen of the Caffer Bread, Encephalartos Caffra, Brosimum macrocarpum, and Sterculia nobilis. In one of the wings there is an old and large Loquat, Eriobotrya japonica, which has occasionally flowered, but cannot be induced to perfect its fruit.

One occupant of the house, which is rarely seen in gardens, is Cunonia capensis (fig. 21, page 157), though it is one of the most beautiful flowering trees that can be grown in a conservatory, greenhouse, or similar structure. Probably one reason why it is scarce is that the propagation has been found rather difficult, yet the tree is of free growth, and attractive even when not flowering, and would well repay for any attention bestowed upon it. The specimen at Syon is believed to be unrivalled in this country, and when bearing some dozens of its long close racemes of white flowers the effect produced is really magnificent. I was fortunate enough to call upon Mr. Woodbridge some time ago when the tree was in its best condition, and though it did not occupy the most favourable position, being partly hidden by other trees and shrubs in front, it was yet surprisingly beautiful. The specimen is about 15 feet high in a large pot, and bears pinnate glossy green leaves, with racemes in some cases nearly a foot in length. The species is, as its specific name implies, a native of the Cape of Good Hope ; it has been in cultivation for over sixty years, and the genus constitutes the type of a natural order allied to the Saxifrages. The following extract from Burchell's Travels in Africa may be of interest :—"This is a handsome tree, with fine shining green foliage, contrasted by numerous, dense, elongated bunches of small milk-white flowers, and twigs of a red colour, having the habit rather of a tropical than of a Cape plant. Its colonial name is Rood Elze (Red Alder), although the tree has not, in any point of view, the least resemblance to the Alder of Europe ; but the waggon-makers say there is some similarity in their wood. I am inclined, however, to believe that the name was given rather in consequence of their growing in similar situations."

THE KITCHEN GARDEN AND HOUSES.

The kitchen garden is some distance from the conservatory, being situated nearer the Brentford Road, and adjoining a public footpath leading from there to Isleworth. Between three and four acres are enclosed within high walls, and outside these about another acre has been recently taken under cultivation, the whole being closely cropped with the best vegetables. The walls are clothed with fruit trees, fine collections of Cherries, Peaches, and Pears being included, all admirably trained. The surface of the walls was for some years covered with cement, but the trees were so unsatisfactory that it has been removed, the walls re-faced or re-pointed, and the trees have since succeeded as well as could be desired. Morello Cherries are grown in large quantities, and after the Pear Conference at Chiswick a collection of the best varieties there observed was added, and these are now grown as single upright cordons on one of the walls. Bush and other Apple and Pear trees are also planted in the lower portion of the kitchen garden near the walks, and yield useful supplies of fruit.

The principal glass houses are in one range extending across the centre of garden from west to east, and nearly 400 feet in total length, but all the houses are not connected. Most of these formed part of the first great range constructed in this garden in 1826 under the superintendence of the gardener, Mr. Forrest. They have a metallic framework, and were originally heated with flues, though of course that method has long since been superseded by hot-water pipes. It is said that the houses were completed and planted within eight months, and Loudon states that in the second year ripe Grapes were cut in the early vinery on April 19th, "when they were worth in London a guinea and a half per pound," ripe Peaches being gathered in May weighing 7 to 9 ozs. each. The houses were built for Pine pits and forcing purposes generally, but Pine culture has now been discontinued for many years, and they are used as vineries, Peach, Fig, and Rose houses. The first of three divisions at the west end of the range is an old vinery, the Vines (Black Hamburgh) having been planted in 1851, and several times cut down or lifted ; they still produce strong canes from the base, and have hitherto fruited well, but cannot be relied upon, and will be superseded another season by young Vines. The second division is also a vinery, which has been renewed, and the front raised so as to allow of ventilation there. Roses occupy the third section, the trees being planted outside in a good border, and the stems taken in through the walls just like Vines. Madame Berard, William Allen Richardson, Niphetos, Gloire de Dijon, and Cheshunt Hybrid are the favourite varieties, and of the last-named there is an uncommonly large specimen that has been lifted and replanted with considerable advantage, the tree being now in fine condition and showing flowers freely. In an early Peach house the blooms are setting well, especially on a very old Elruge Nectarine, and the back wall is covered with Camellias trained to a trellis. This is found to be a convenient arrangement, as the plants make an early growth and come into flower about Christmas time when Camellias are valuable. A late Peach house in another portion of the range contains some well-trained, healthy, fruitful trees, and there Roses are trained to the back wall, giving a succession to the house already mentioned. Royal George Peaches, with Elruge and Lord Napier Nectarines, are mainly relied upon under glass, while of Figs, to which a house is devoted, abundant crops are obtained from young and old trees of Brown Turkey planted out in borders. Several other varieties complete this range, and then comes a series of lean-to pits employed for forcing Beans, plants, and temporary Vines. The latter are managed in a very simple manner. They are planted in a central bed and trained to the roof, both up and down, leaving clear spaces over the front and back shelves, and after one good season's growth they are fruited freely for one or two years. An adjoining pit is worked alternately with this, so that as the Vines are cut out in one those in the other are fruited, and this is found to answer better than growing Vines in pots. Amongst the miscellaneous plants forced in these pits the old Sprekelia, or Amaryllis formosissima, is very notable. Three to four bulbs are grown in a 32-sized pot, and at the present time are producing their rich scarlet flowers freely.

At the back of this range are the potting sheds, Mushroom house, bothy, and various offices, all conveniently arranged. In the Mushroom house the shelves are formed with iron plate fronts and T-iron supports, upon which tiles are placed to hold the beds, the lower space covered with wooden shutters on hinges being devoted to Seakale and Rhubarb forcing, with any salading that needs blanching. The bothy is a convenient one, a bath room and lavatory heated with hot water being attached ; and not only is the personal comfort of the young men considered, but provision is also made for their educational improvement, as a schoolmaster attends several evenings a week during the winter to give courses of plain instruction on useful subjects. Too seldom do employers recognise the benefits they can confer upon those in their service by such consideration and assistance, and the advantages they gain themselves by the greater interest manifested in the work of the establishment.

HYMENOCALLIS MACROSTEPHANA.

In the northern portion of the kitchen garden within the walls are numbers of useful houses, forcing pits, and frames devoted to Cinerarias, Primulas, and miscellaneous plants for decorative purposes. Amongst Orchids there are some large specimens of Cœlogyne cristata, Cymbidium Lowianum, Cypripediums, Aerides, and excellent pans of Pleiones. Anthurium Schertzerianum is represented by numbers of healthy plants, but a most remarkable feature is afforded by a house full of Hymenocallis macrostephana for which Syon is celebrated. It is about nine years since this plant was brought prominently into notice, but even now it is unknown in many gardens where it would be greatly valued when its qualities were known. The origin of the plant is unknown, but it is believed to have been first sent to this country from a continental nursery as Pancratium fragrans, and Mr. Baker has hinted that it is possibly a garden hybrid between Hymenocallis carribæa and Ismene calathina. In 1879 specimens were sent to Kew by Sir Philip Egerton, who stated that his gardener, Mr. William Muir, had recognised its distinctness from Pancratium fragrans two years before, and by Mr. Woodbridge; it was also exhibited by the latter at South Kensington, being first awarded a botanical certificate and subsequently a first-class certificate. The plant was fully described under the name given above, and an excellent coloured plate was published in the "Botanical Magazine" for July of the same year (t. 6436). The flowers are much like a Pancratium, but with a broad funnel-shaped corona 3 inches across, and, like the long linear segments, is pure white. They are produced in umbels of six to twelve, the majority of these open now averaging eight or ten each, and the fragrance is peculiarly sweet and distinct. Another advantage respecting the plant is that though it naturally flowers in February, yet it can be

had in flower at almost any season of the year; in fact, there is a constant succession if bulbs in different stages are potted together. This Hymenocallis is treated exactly the same as Eucharis, and both grows and flowers freely; it is also readily increased, as the offsets are produced in numbers.

Convenient pits are employed for forcing Strawberries, of which about 3000 are required annually of the varieties Keens' Seedling, President, and Sir Joseph Paxton, which afford a succession in the order named. The pots are half-plunged in beds of leaves quite near the glass, and the plants are looking extremely promising. The chief other houses are on the south side of the north wall, lofty curvilinear structures employed as vinery and Banana houses. Musa Cavendishi is grown in the latter, planted out in beds of rich soil liberally supplied with water and heat. Vanilla is also extensively grown and abundance of fruit is obtained, at the present time there are several large bunches of the long pods ripening. The Vanilla is planted in narrow shallow troughs near the top of the back walls and at the side of the houses, the growth being very vigorous and well matured.

It only remains to add that Syon garden has been under the charge of Mr. Woodbridge for seventeen years, during which time his strict attention to his employer's interests and his kindliness of manner have gained him many friends. He has this week been appointed a member of the Council of the Royal Horticultural Society, and by a strange coincidence a former gardener at Syon House—Mr. Hoy—was elected a member of the Council formed when the Horticultural Society received its first charter of incorporation.—Lewis Castle.

FRUIT AT THE NEWCASTLE SHOW.

Mr. Goodacre places himself in an unenviable position when he publicly attempts to throw ridicule upon the exhibits of his successful rivals. The authenticity of his statements are challenged, as has been the case in his allegation of "Warner's King Apples" and "Green Citrons" forming part of the collection of fruit that won the Jubilee prize. He now finds it convenient to ignore the subject altogether, not even attempting to substantiate one of his charges. I can only judge of the Pears grown at Elvaston by those exhibited at Newcastle, and if they are to be taken as a fair sample of his productions then the less said about them the better. Your representative at the Show must have correctly described these when he stated Mr. Goodacre "was not exhibiting in his usual style." He appears to find some comfort in saying, "I am the only exhibitor who staged fifty dishes of ripe fruit, as stipulated, for the Jubilee prize." Rather strong language this, but notwithstanding, I venture to challenge him to name a single dish in either of the collections awarded the first and second prizes that was further from being ripe and fit for use than was the dish of green Louise Bonne of Jersey Pears in his own lot. With your permission I beg to submit this question to the decision of the two gentlemen who officiated as Judges upon the above named three collections, and let honour go to whom honour is due.

Beyond all question the Tomato is a fruit; whether Dr. Hogg includes or excludes it from his "Fruit Manual" will in nowise alter the fact, any more than it would do in the case of Melons or Oranges being considered fruits. There are more ways of eating Apples than eating them from the tree; so likewise with Tomatoes, the precise form in which we partake of them being simply a matter of taste.—An Old Hand.

SELF-IMPROVEMENT.

In the *Journal of Horticulture* of February 9th "Experientia docet," in his "Plain Words to Some Gardeners," has broached a subject of the very gravest importance to all who hope to attain success in life, and especially to those to whom it is addressed—viz., some professional gardeners.

This illiteracy of head gardeners is more prevalent than is generally supposed, and when it affects themselves only it is bad enough, but when it proves detrimental to those employed under them it is much worse. Of this fact I am painfully aware, for unfortunately it has been my lot to serve under no less than three head gardeners who could not write a decent letter of recommendation, and this in establishments where eight or ten men were employed. Now, as all gardeners know, this is absolutely necessary when a young man applies to any of the nurseries for assistance in obtaining a change of situation, for invariably the usual form is received to be filled up and returned with a letter of recommendation from the head gardener. The inability of the head gardener to comply with this request, however good his intentions may be towards the young man, places that individual in a difficult position.

In view of these facts it is much to be deplored that gardeners, and especially young gardeners, should be so blind to their own interest, and so careless of their future welfare, as to neglect the many opportunities which are afforded at the present time for self-improvement. At no time in the history of this country, and probably in the history of the world, was the necessity of education so important and the means of obtaining it so accessible as now. No time also in the career of a gardener is so propitious for self-education as the years of his apprenticeship and bothy life—years which all qualified gardeners must pass through on their way to preferment. Yet it is painful to relate that in instances innumerable those years, the best a gardener will ever have, when his opportunities are greatest and his cares and responsibilities least, are generally wasted in the pursuit of the most thoughtless and unmanly frivolities, if nothing worse.

During my career as a gardener it has been my lot to live in several bothies and to have an intimate knowledge of many more; and I do not recollect one instance where a young man systematically devoted the whole or part of his evenings to self-improvement. In some cases, it is true, I have come across those who have made spasmodic efforts to learn French, Latin, and even Greek, but their ambition to become linguists was generally extinguished before the expiration of many days. My knowledge of their attainments has led me to the conclusion that the time spent in this way would have been better employed in the endeavour to acquire a decent acquaintance with their mother tongue. I have also in my travels met with young men in bothies who, finding the time hang heavy on their hands during the long winter evenings, have expressed a desire to take up some kind of study, and I have been asked to suggest a subject. In complying with a request of this kind I once recommended the course of "Lessons in English" in Cassell's "Popular Educator," knowing it to be a subject of great importance; and I even went so far as to offer the loan of my volumes for the purpose. This suggestion was, however, scornfully scouted, the person in question declaring indignantly that he "learned all that at school." This, however, was more than doubtful, for many were the bad half hours I had had with him when at breakfast he has insisted on reading to me paragraphs of news from the morning paper. His pronunciation was not pure, and manifestly he did not always understand the meanings of the words he tortured.

Occasionally I have found young men in bothies who have studied in a dilettante fashion such useless things as phrenology, physiognomy, and the like; but, strange as it may seem, I have never yet met one who studied in any way whatever the science of botany. This is to be deplored, for there is, I presume, no science, the pursuit of which is more healthy, more fascinating, and more eminently useful to a gardener than this. It is intimately associated with his everyday work, and its value to him cannot be over-estimated.

Before I close this article I would like to mention one means of self-improvement, of which I have taken advantage, and of which I recommend all young men to take advantage, if they wish to seriously engage in the task of self-education. It is shorthand—and when I say shorthand, I mean Mr. Pitman's phonography. I commenced the study of this system of shorthand eight or nine years ago, and in a short time obtained a certificate of proficiency from Mr. Pitman. I have used it almost daily ever since, and to it alone I owe the ability, such as it is, to write this article, and numerous paragraphs of news which I contribute weekly to a certain paper in my capacity of local correspondent. It has been to me the "open sesame" of the storehouse of knowledge, in that the study of it has created in me habits of patient application, without which nothing can be achieved. It has also strengthened my memory, and led me unconsciously into the subjects of spelling, grammar, and composition, subjects with which I had previously but a very slight acquaintance. I would therefore advise all young gardeners to learn phonography. It is easily acquired by persons of ordinary capacity, and though no one not a phonographer can estimate the pleasure to be derived from the ability to trace fluently the beautiful characters, they may be able to see the practical use to which it may be put in keeping a commonplace book or diary, instead of the ordinary tedious system of writing.—G. B.

"Experientia docet" has reopened the question of gardeners' defective education. The British gardener is in a state of evolution; he is in a great measure what his environment has made him, and as a matter of course the impress of his surroundings will leave its mark upon him in the future as in the past. So far as defective composition and blundering spelling are concerned the march of education will provide a remedy, but it will not solve the problem which faces us when we take the question in all its bearings, from the gardener of the duke down to the single-handed gardener. This problem is, Can we combine the high standard to which a gardener may attain in a profession which gives scope to the highest intellectual capacity with the social status of a mere servant in the light of which a great portion of employers view their gardeners? It will at once be seen what a serious obstacle confronts us if all gardeners are to be educated to a high standard. It goes without saying that when employers can get a more intelligent class of gardeners for the same amount of remuneration they will of course take advantage of the opportunity, and neither gardener nor employer be the worse for it. But let us look at things as they are at present. We shall find that, generally speaking, as we descend in the scale of establishments, there is not in the same proportion a corresponding deterioration in the capacities of the men who preside over them. If employers engage the ignorant and incompetent when there is abundant good men to choose from, it is more the fault of the system under which gardeners have been engaged than the lack of really good men. If ignorant men get pitchforked into good places the superior men, for the want of influence, are often driven to accept situations considerably below their capacities and merits, hoping that by their industry and talents to work themselves into a decent position by improving the places under their charge and getting credit for so doing Some few succeed, but how many fail because neither sympathy nor

confidence is accorded to them by their employers, the garden being looked upon as a convenient sort of shop to supply the family with fruit and flowers, &c., at the cheapest rate, and otherwise being looked upon as an expensive necessity, being as it were part and parcel of the establishment, and must have the semblance of being kept. Under these conditions the gardener's position becomes irksome, to which may be added the whole catalogue of petty annoyances incidental to such a position, one of the worst being, that whilst the gardener is looked upon as a sort of useful labourer, the inhabitants of flunkeydom and the stables are pampered in everything, and by reason of better pay and its equivalents, they are tacitly allowed to assert themselves as the gardener's superiors. If by the sheer force of character he avoids falling to their level, he places himself between two stools; he will have considerable difficulty to repel invasions of his legitimate rights in the garden proper, to which, if he submits, he loses his self-respect, and if he does not submit he will eventually become the victim of their intrigues. This sort of thing is the "gall and vinegar" which makes the bonds of servitude so bitter, and which a high standard of education of itself would rather intensify than mitigate. It is no use blinking the fact, our position is that of a servant purely and simply, a little lower than the position of the artizan. How is it that other classes of the community combine to make their influence felt? I have no desire to raise the bugbear of trade's unionism with its pernicious doctrine of strife and strikes, which under no conditions could be applied to gardening and gardeners, I would rather trust to the united voice appealing to the newer doctrine of "Right prevailing over Might," which is now bringing about the general improvement and amelioration of mankind. That the force of public opinion is now becoming the arbiter, not only of differences between employer and employé, but it is also, in a large measure, the ruler of events both social and political, inclines us to the opinion that if gardeners were organised to give effect to their aspirations, it could be made the engine to lift them on to a higher social level. It is an axiom that "Knowledge is power;" so also would unity multiply that power in the proportion that as a man standing alone, no matter how eminent he may be, he represents but a unit; where if he call upon others to join him, he multiplies his own individuality, and by the force of his knowledge lifts up the others to his own level. It is this sort of levelling upwards which we require. That there is abundance of good material in the aggregate for the beginning of this movement there can be no doubt. To the ignorant and lazy I would give fair warning, to which, if they paid no heed, I would trust to the law of the survival of the fittest to push them out of existence.

The question now arises, By what means can this revolution be brought about? I answer, By organising a National Horticultural Society embracing the whole of the United Kingdom, something on the lines of the "Yorkshire Association of Horticulturists," of course, with higher aims and further reaching in effect. An example might be taken from the Foresters and other friendly societies, with individual societies wherever practicable, with districts parcelled out so that a *bonâ fide* representative body to discuss matters of special interest for the general good. In addition to practical essays and discussions thereon, and the further extension of the library movement to the fullest extent, by the combination of districts, botanical and other teachers might be engaged. Every district at least should be the headquarters of a Natural History Museum, giving prominence to such subjects as entomological specimens injurious to garden and farm crops, and models of pomological specimens.

If gardeners would really bestir themselves, taking into confidence their employers, and show them that the movement was for their mutual interests, both sympathy and substantial help might be accorded. Once they are convinced of its genuineness a greater degree of confidence would be established between them, which would make them more accessible in all cases of difficulty; and many a misfortune could be explained where for want of this confidence it would probably be magnified into a fault. A better state of things would eventually be the result. The gardener with a good library at his service, opportunities for joining in discussions, giving more confidence and a better address, a knowledge of physiological botany, and able at all times to give an intelligent reason for effects by tracing them to their true causes in matters relating to the garden, with the whole fraternity of gardeners at his back, would no doubt rise above his fellows in the same establishment, and he would thus be better able to hold his own. So, as you may see, Mr. Editor, the only difference between "Experientia docet" and myself is a difference of methods, his being isolation and self-schooling, mine combination, unity, and general advancement.—GAMO.

"EXPERIENTIA DOCET" has not spared the rod in his castigation of illiterate gardeners, and I shall be much surprised if he does not have some bad writing and spelling to wade through in the next few days. But has he not made a mistake in supposing that all men are endowed with the same natural gifts? I have no doubt he has penned his remarks from actual experience, but one can hardly understand men in good positions as gardeners making such public displays of their ignorance as pointed out. I know some good gardeners and unassuming men who have told me it is a laborious business for them to sit down and write a letter, but neither of these men would think of publicly exhibiting their inabilities, and I think they do their gar'ening work with enthusiasm and regard the other part as quite a secondary affair. Still, they are good servants for all that. Has not your correspondent started this controversy rather late in the day? The men he has brought to the pillory, I take it, had but a poor education. I quite agree that they might have gone to some evening classes, as I did until I was twenty-five years old; but the rising generation of gardeners ought to be good scholars, seeing that the Board School officers look after even the poorest lad's education. Even then there will be some illiterate men, who will still get good situations, while others who have tried hard to fit themselves for good places will have to stand aside. I know this is the experience of some good men, and also of one who left school at the age of ten, when copy-books were 10d. each.—D. T.

I WAS much pleased with the leading article on page 99. It contains capital advice for us all, and should be the means of making some of us try and improve ourselves. There are few young men that have the same opportunities for improving themselves that young gardeners have. If a young fellow has an average amount of ability, and continues to be a dunce all his life with so many opportunities within his reach, it is his own fault. It is quite true—as stated in the article in question—that there are many gardeners holding good places that cannot write an intelligent letter to their employers or to anybody else. It is a pity when such is the case, as such men lower the standard of gardeners; and gardeners, as a rule, are in my opinion the most intelligent class of people on the face of the earth.—P. C.



CHRYSANTHEMUM W. G. DROVER.

MESSRS. W. & G. DROVER, Fareham, Hants, send us two large blooms of the Japanese variety which was awarded a first-class certificate at the January Show of the National Chrysanthemum Society. This seems to be naturally a late-flowering variety, and is much better now than it was in November. The florets are 3 to 4 inches long and half an inch broad, incurving, white, streaked with purple.

CHRYSANTHEMUM SHOWS.

WE have received notices of the following fixtures for the Shows of 1888:—

National Chrysanthemum Society, September 12th and 13th; November 7th and 8th; and January 9th and 10th, 1889.
Kingston-on-Thames, November 6th and 7th.
Portsmouth, November 7th, 8th, and 9th.
Brighton, November 13th and 14th.
Putney, November 13th and 14th.
Winchester, November 13th and 14th.
Lindfield (Sussex), November 15th and 16th.
Sheffield and West Riding, November 16th and 17th.
Birmingham, November 21st and 22nd.
Liverpool, November 21st and 22nd.
Hull, November 22nd and 23rd.
Pontefract, November 23rd.

NATIONAL CHRYSANTHEMUM SOCIETY.

AS stated last week, an important meeting of this Society was held at Anderton's Hotel, Fleet Street, on February 13th, but we could only give a brief reference to the business then transacted. There was a large attendance of the members of the General Committee, including the representatives of several affiliated provincial shows, R. Ballantine, Esq., presiding.

The principal matters for consideration at the meeting were the Provincial Show and Catalogue schemes, which have been previously alluded to. The Hon. Secretary, Mr. William Holmes, read the following report with regard to the

PROVINCIAL SHOW.—Pursuant to the resolution passed at the annual general meeting, "That the whole question of a provincial show be referred to a Sub-Committee, to consist of Messrs. Bevan, Wynne, Castle, Dean, Gordon, and Rundell, with the officers, to consider and report to the General Committee," the Sub-Committee now report that they met on Friday, February 3rd. The whole of the correspondence that had transpired was first read, and then the question as to the desirability of this Society holding a provincial show was debated in all its bearings, with the result that your Committee unanimously arrived at the opinion that it is most desirable in every way that the National should hold provincial shows, providing the Society can be secured against heavy or substantial loss in so doing.

It was further agreed that several Societies in the North should be communicated with, with a view of ascertaining their opinions as to the desirability of holding provincial shows, and also their willingness to co-operate in the matter. Amongst the towns so selected were York, Sheffield, Leicester, Newcastle, Manchester, and Darlington.

The following basis of terms was then agreed upon to enable the Secretary to institute negotiations with any society that might be

desirous of inviting the National to hold a provincial Show in conjunction with their own—viz.

1.—That the local Society should guarantee the National a stipulated sum towards the Prize Fund for the provincial show.

2.—That the National should undertake to offer a sum for prizes in medals and cash, not less than one-third more than the sum guaranteed by the local Society.

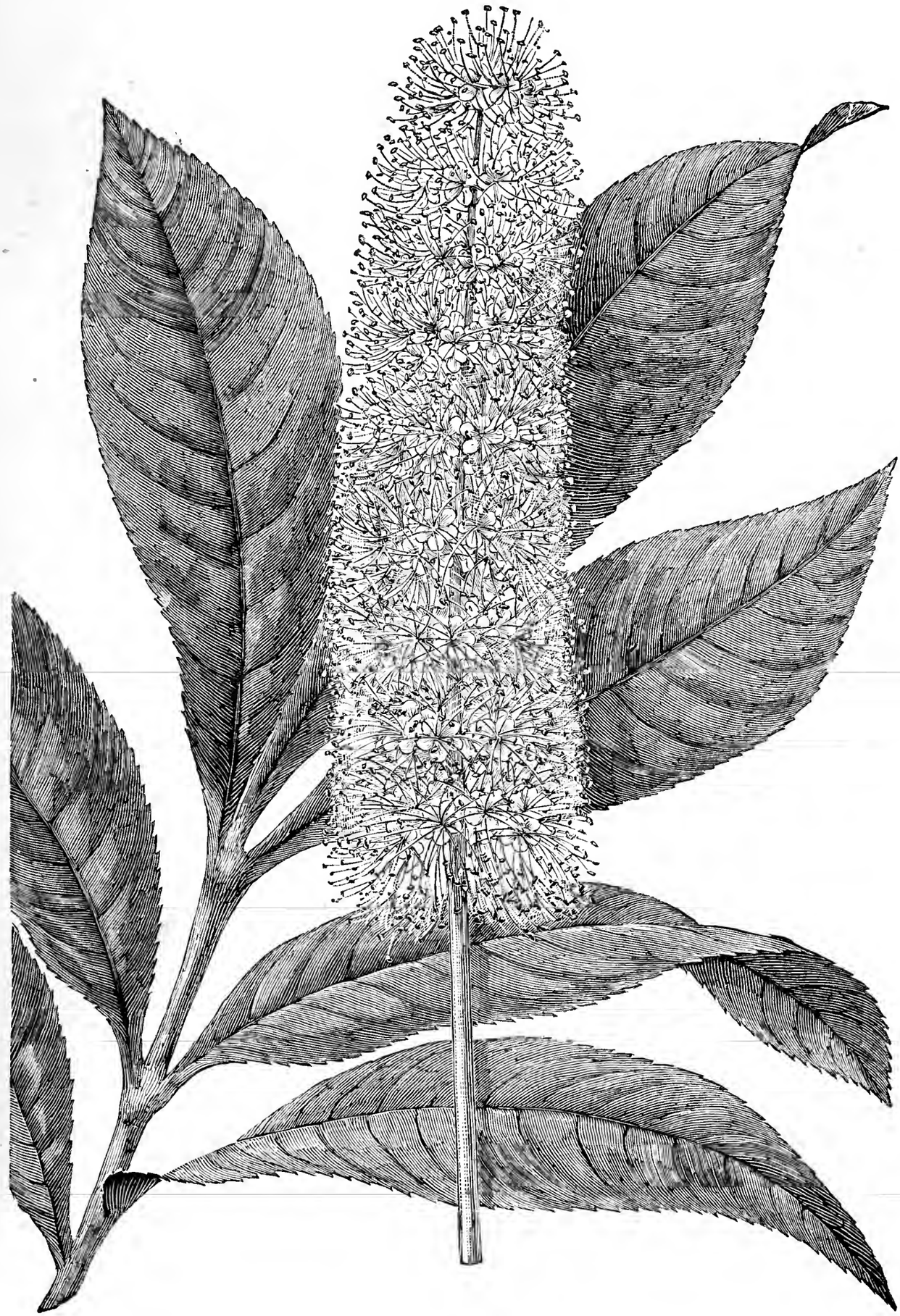


FIG. 21.—CUNONIA CAPENSIS. (See page 154.)

3.—That an equal number of judges should be appointed by each Society, the judges themselves selecting a referee.

4.—That the local Society undertake all the expenses usually attend-

ing a good Chrysanthemum Show, and also the general arrangements, with the exception of those on the show day itself, which shall be carried out conjointly.

5.—The local Society to take all gate and ticket money, and the National to receive one-third of the actual profits, if any, resulting from the Show.

6.—All members of the N. C. Society to be entitled to compete or visit the Show free of charge.

7.—The Show to be styled, "The Provincial Show of the National Chrysanthemum Society, held in conjunction with the exhibition of the local Society."

An adjourned meeting of those present on February 3rd was held on February 13th to consider the further information and replies from the northern Societies. The replies from the several northern societies were read and considered, with the result that your Committee unanimously recommend that the provincial show for 1888 be held at Sheffield upon the basis of terms already suggested, and the invitation of the Sheffield and West Riding Society as set forth in Mr. Woodcock's letter of February 8th.

The adoption of this report having been formally proposed and seconded, Mr. Holmes read several letters received from the Hon. Secretary of the Sheffield and West Riding Chrysanthemum Society, which indicated what an enthusiastic interest was being aroused in support of the scheme, and it was unanimously resolved that the report be adopted and referred to the Sub-Committee previously appointed to carry out the details.

THE NATIONAL SOCIETY'S CATALOGUE.—Mr. Holmes also read the annexed report respecting the proposed new Catalogue, which was at once adopted.

A Sub-Committee of Messrs. Castle, Gordon, Dean, Harman Payne, and Wynne was appointed at the annual general meeting, January 31st, to consider and report to the General Committee as to the best method of preparing and publishing a new Catalogue. The Sub-Committee met on Friday, February 3rd, the whole of its members being present, also Mr. Ballantine and W. Holmes as officers of the Society, and report as follows:—The Sub-Committee have fully considered and discussed the question of a new Catalogue in all its bearings, and now recommend

A.—That the contents of Catalogue shall include

1.—A preface and statement of the procedure adopted in the preparation of the work, giving also the names of all those who have officially assisted in its compilation.

2.—A condensed history of the Chrysanthemum, to occupy about two pages only.

3.—Selected and full descriptive lists of the best varieties of Chrysanthemums for exhibition purposes in the following sections—viz., Incurved, Japanese, Japanese Reflexed, Reflexed, Large Anemone, Japanese Anemone, Pompons, Pompon Anemone, each section to be preceded by a typical illustration and brief description of its general characteristics.

4.—A complete alphabetical list of Chrysanthemums, with synonyms in italics, also indicating section to which each belongs; and, further, an abridged description of all those varieties not included in the selected lists.

B.—That the following procedure be adopted in preparing the work.

1.—That a Catalogue Committee of thirty be appointed, to consist of amateurs and gardeners only, each to be of acknowledged Chrysanthemum repute, but not necessarily members of the Society.

2.—That a copy of the present Catalogue be sent to all these members, with the request that each would make a supplementary list of any varieties that have come under their notice and are not included in present Catalogue, and also to indicate, both in the Catalogue and supplementary list, those varieties they consider worthy of culture for exhibition purposes, marking those suitable for specimen blooms with an X, and those for specimen plants with an O.

3.—That a Revision Committee of three be appointed, with power to call in such further aid as they may require, to receive the returns from the Catalogue Committee, tabulate and revise them, and prepare for the press.

C.—That advertisements be accepted on the following terms—30s a page; 18s. half page, and selected positions by agreement.

D.—That tenders be invited for printing the work, and that it be published at 1s. per copy.

E.—That the Catalogue Committee be constituted as follows—viz., Messrs. Molyneux, Gordon, Payne, Orchard, Woodcock, Herrin, Shoesmith, Woodgate, Garnett, Cox, Lyne, Gibson, Parker, Dyer, Beckett, Sanderson, Wright, Flight, Jukes, Martin, Sullivan, Mease, C. J. Salter, Ridout, Udale, A. Salter, Castle, Kendall, Mardlin, King. The Revision Committee to be empowered to fill any vacancies that may occur.

F.—That Messrs. Castle, Gordon, and Harman Payne constitute the Revision Committee, with the latter as Secretary. This Committee to be empowered to engage such paid clerical assistance as they may require.

FLORAL COMMITTEE.—The miscellaneous business included the election of the Floral Committee, the following fifteen being elected out of eighteen nominated—viz., Messrs. Stevens, Dean, Mardlin, Owen, Bevan, Gordon, Gibson, Cannell, Gilbey, Addison, Swift, Wright, Kendall, Castle, and Boyce.

DATES OF SHOWS AND MEETINGS.—The following dates were agreed upon for the metropolitan shows:—September 12th and 13th; November 7th and 8th, 1888, and January 9th and 10th, 1889. The Floral Committee will meet on September 12th, October 10th and 24th, November 7th and 21st, December 5th and January 9th.

Some alterations were made in the rules, and a bye-law was carried to the effect that members desirous of withdrawing from the Society must signify their intention before September 1st. It was also resolved that no affiliated Society should be allowed to have more than ten medals except by special arrangement. Several new members were elected, and the Tiverton, St. Neots, Hinckley, and Faversham Societies were affiliated. The consideration of the schedules and appointment of Judges was referred to a Sub-Committee, and the proceedings terminated with the usual votes of thanks to the Chairman and Secretary.

AURICULA PAGE'S CHAMPION.

THE replies in the Journal to my inquiry about Auricula Page's Champion, as well as more than one private communication, convince me that I have the true variety. Descriptions, too, in old books of various dates all confirm the opinion, among these the following from the "Midland Florist" for 1847:—"Fine tube and paste; ground colour rather broad, a brownish crimson; the green vivid and fine; pips round and flat; the pip frequently cracks through the paste. Champion in its best style is worthy of its name. The plant is of small habit, but a fine trusser." Champion is an older flower than I thought, as Sweet's plate and description appeared, if I remember rightly, in 1827.

Some other varieties make with me less satisfactory plants than this. Countess of Wilton, for instance, I can make but little of from its persistently sending out small offsets. Talisman, too, and Conservative require watching from the same tendency. George Levick and Lancashire Hero are comparatively weak growers. The last I am told is to be found vigorous in England; I have never seen it so in Scotland.

Your correspondent, who obligingly answered my note, inquires as to the existence of Page's Duchess of Oldenburg and Lord Hill. Of the latter I can learn nothing, but the former is to be found in the north. I had it myself some years ago and gave it away. I may add that one friend has been lately looking without success for Headly's Conductor; another wonders whether Pearson's Badajos and Liberty are still to be met with, and I have failed to get hold of Stretch's Alexander. The last I have seen in only one catalogue, and that some years ago.—W. KILGOUR, *Blair Drummond.*

UNDER GARDENERS.

IF an under gardener ventures to put forth in the columns of any gardening periodical a complaint of the treatment he has received, or is receiving, he is taken to task by under as well as head gardeners. My opinion of some of the letters from under gardeners taking down their less fortunate brethren is very poor, and I trust they may never have occasion to complain of the harsh treatment many suffer; and it is very rarely that a head gardener says a word in favour of subordinates.

I had the pleasure of serving as foreman for eight years under three of our best English gardeners, and two years under one of our worst. Would your readers believe that this man, if I may call him such, had fourteen foremen under him in six years, and journeymen out of number? Were they all bad? I stuck to my post and won golden opinions of all except this man. I might write columns of the treatment we experienced, also of the means we tried to win his good will, but all to no purpose. If his eye should catch this, I trust he has reformed. Might I say here that Mr. W. Bardney's name was often mentioned by the journeymen under me for the kind way he often stood up for under gardeners.

How often do we see a thoroughly honest and experienced foremem sacrificed to ill-will, and sometimes jealousy. In my opinion no gardeners should be allowed to condemn a man unheard by the employer of both.—A HEAD GARDENER.



FRUIT FORCING.

VINES.—*Early Vines in Pots.*—Early Vines must not sustain any check through dryness. Top-dress with rich turfy loam and decayed manure in about equal parts, placing rims of zinc or lead 3 or 4 inches deep round the tops of the pots, or, if the pots are plunged to the rim in fermenting material, strips of turf about that thickness should be laid so as to form the necessary dish. In order to encourage the swelling of the berries keep the laterals below the bunches somewhat closely stopped, allowing more liberty to those above them, but avoid overcrowding the trellis with foliage that cannot have full exposure to light. With the Grapes approaching the stoning process careful treatment is necessary. Ventilate early in the day, affording a little air at 70°,

increasing it with the heat to 85° with sun, closing at 80°, and if an advance follow to 85° or 90° all the better. Avoid cold draughts, they are more prolific of decay than anything else. If red spider appear paint the return pipes with sulphur. Afford liquid manure a few degrees warmer than the house in which they are growing, applying it also to the turf placed around the rims of the pots, as also the plunging material where the roots are allowed to find their way from the bottom of the pots, there being nothing like plenty of feeders to secure well-filled berries.

Early Forced Planted-out Vines.—Those started early in December must have the berries thinned, and no time should be lost in doing so as soon as it can be seen which are properly fertilised by their taking the lead. Endeavour to obtain compact bunches, tying up the shoulders in preference to taking out a quantity of berries. Remove superfluous bunches unflinchingly, seeking a full crop of well furnished bunches, properly swelled, and perfect in colour and finish, which are much more creditable than an enormous crop of red berries, as is sometimes seen. Allow the laterals to extend beyond the fruit as far as is consistent with the exposure of the foliage to light and air, tying and stopping as required. Afford a thorough supply of tepid liquid manure to the inside border at intervals as required to maintain the soil in a thorough moist state, and mulch with 2 or 3 inches thickness of short manure and as fresh as is safe, for, although a moderate amount of ammonia is beneficial, when too powerful it is productive of serious injury. The night temperature should range from 60° to 65° at night, 70° to 75° by day, with 10° to 15° advance from sun heat, commencing to ventilate from 70°, closing between 80° and 85°, damping all available surfaces well at the time. Do not syringe the foliage, as, however clear and soft the water may be, there is danger of sediment—a deposit on the berries; and though it may escape observation until the Grapes begin to finish, it is certain to then appear as a serious blemish. The outside border must be well protected against the chilling effect of snow and cold rains.

Vines Started at the New Year.—Disbud the Vines now the best shows of fruit can be determined, and it is not wise to be in too great a hurry about this work, nor in tying the shoots to the trellis, which must be done carefully, so as not to detach the shoot at its base nor cause it to snap by bringing it down too sharply at the point. Remember also that the object of disbudding is to give the growths full exposure to light, it being better to err on the side of too little rather than too much, or overcrowding the foliage. Stopping too should not be done too hurriedly. Allow at least two and if possible three or four joints beyond the bunch, and stop all laterals below the bunch at the first joint, or they may be rubbed off except from the two lowermost leaves. The laterals from these should be pinched at the first joint, but those level with and above the fruit may be allowed to extend as space admits. When in flower afford a night temperature of 65° to 70°, with 10° to 15° rise from sun heat, closing at 80°. Vine flowers set best when the atmospheric moisture is not excessive. An over-moist or a dry atmosphere must be equally avoided. Muscats require a somewhat higher temperature and drier atmosphere than Black Hamburghs when setting, artificial impregnation being practised with all shy-setting varieties, particularly Muscats, which are often deficient of pollen, or if plentiful a better set is secured by fertilising every bunch carefully with Black Hamburgh pollen than when their own is employed.

Late Vines.—A long season of growth is required by late Vines, as to insure the Grapes keeping well they should be fully ripe by the middle or end of September. To effect this start the Vines at the end of February or the beginning of March. Let the inside border be well supplied with water at a temperature of 85° to 90°, and if there are fermenting materials at command a bed may be made upon the border, which will lessen the necessity for fire heat and induce a regular break. The rods should be sprinkled two or three times a day, maintaining a night temperature of 50° to 55°, and 65° in the daytime, by which means the Vines will start freely and there will be every chance of the Grapes becoming thoroughly ripe by September, even such varieties as Gros Colman, the most noble late Grape, and Gros Guillaume, which require a month or six weeks more time to ripen thoroughly than Lady Downe's and others. As a general rule all houses of late Grapes must be started not later than the end of next month, hence they should be prepared as soon as possible, washing the woodwork, dressing the Vines, removing the loose surface soil from the border, and supplying with fresh, to which has been added a sprinkling of crushed bones. We may mention that we have seen great benefits derived from applications of artificial manures, having tried most of those advertised and have found all good, indeed they are preferable in some instances to stable or farm-yard manure, as they have not the tendency to leave a deposit of soapy matter behind. The outside border should be protected against chill from falls of snow or heavy rains and frost. A moderate covering only will be necessary.

Late Houses of Black Hamburghs.—Keep these houses cool and dry not allowing the border to become dust dry and crack, but a moderate amount of moisture only will be necessary to preserve the roots in sound condition. The only precaution necessary is to ventilate fully at and above 50°, and when that becomes the mean of the external air, or a little before, the Vines will break naturally, which usually takes place during April; the only assistance required is to maintain an artificial temperature of 50° to 55° at night and on dull days. The Vines will set their crops by the early part of June, and swell them with sun heat, artificial heat only being required after the Grapes begin to colour, as they are much improved in quality through ripening in a higher temperature, indeed the Grapes must be thoroughly ripened or they will not keep well.

Vines from Eyes.—Eyes inserted as advised have rooted, and if in small pots they may be shifted into a larger size as soon as the roots reach the sides, standing the pots on shelves over hot-water pipes in preference to plunging them in bottom heat; or if the eyes were inserted in pots or pans, several together, they may be placed in small pots singly, plunged in bottom heat to insure speedy root-action, and when the roots reach the sides transfer them to 6-inch pots. Syringe well amongst them, and stop those intended for fruiting at the first joint of the laterals, but those intended for planting out this season, whether grown in pots or turves, may be allowed to retain all the growth made.

PINES.—*Plants Starting into Fruit.*—Those which were selected about the beginning of last December, and started by an advanced temperature and moisture, will now be showing fruit; and as it is advisable to enhance the ripening of the fruit of these plants as much as possible, the temperature about them may be maintained at 65° to 70° at night, and 75° to 80° in the daytime under favourable circumstances, ventilating at 80°, allowing an advance to 85°, and close at about that figure, utilising the sun heat as much as possible. With the fruit advancing the plants will require more water at the roots, examining the whole stock once a week, as with increased light and heat the need for water will correspondingly increase. Recently started plants to succeed those already named should have a night temperature of 65°, and 70° by day artificially, which will be sufficient for them for some time longer.

Starting Suckers.—Suckers will have to be started about the commencement of March to provide plants to give a succession of fruit from next December onwards; therefore attend to the preparation of soil for potting, and a fermenting bed in some close structure to generate and maintain a bottom heat of 85° to 90° near the surface, and with means of maintaining a temperature of 55° to 65° by fire heat with regularity.

TOMATOES.—Our early supplies are grown in pots. The first are from cuttings struck in autumn and kept in small pots near to the glass in a Cucumber house until January, then we drain 10-inch pots well, place a few rough pieces of turf over the crocks, and turn out the plants, using rough turf with about a fourth of well decayed manure. There is a considerable space left in the pots after the plants are put in, which is utilised afterwards for additions of compost as the plants advance and the roots protrude. They are supplied with liquid manure after they become established. The plants are stood at the sides of a low span-roofed house kept at 60° to 65° at night, and 70° to 75° by day, and are trained to the trellis fixed about 9 inches from the glass. The plants show fruit when only a few inches above the rim of the pots, and at about every second joint right away, they being trained as single cordons, kept to one stem by pinching, or rather rubbing off all growths except the lead. In that way they go on to the extent of about 6 feet, when all growths are removed as they show, and the foliage is kept comparatively thin by shortening the leaves after the fruit corresponding to them are swelling. The first, or cutting plants, have now fruit set and swelling. To follow these we have plants from seed sown at the new year. They, too, have been transferred to the fruiting pots. These will keep up a supply until the planted out plants come in, which are from seed sown at the beginning of February, and which in strong plants showing fruit will be fit to plant out early in April. They, of course, are grown in heat and close to the glass. The varieties are Acme, Excelsior, and Hackwood Park.

KITCHEN GARDEN.

THE WEATHER AND WORK.—Of late we have had much snow and frost. With the exception of wheeling on manure outdoor operations in the vegetable garden have been at a standstill. We always prefer to wait for good weather rather than dig, plant, or sow when the soil is not in a favourable condition; but where there is any indication of a late spring and a scarcity of produce every effort should be made to push crops forward under glass or with protection.

SEEDLING VEGETABLES.—The seed of Cauliflower, Lettuce, and Brussels Sprouts sown some weeks ago in boxes under glass has now produced plants several inches in height, and timely attention must be given to thinning and transplanting, or they may be spoiled. As a rule they come very thickly in the seed boxes, and by the time they are a few inches high they are so crowded as to injure each other and produce very long spindly stems. This is bad for them at the beginning, as when they start with a weak stem they are very apt to retain it, and flower prematurely or partially fail. It is quite different, however, if given more room as soon as they can be handled, and if they are dibbled 2 or 3 inches apart into boxes or frames they will soon become sturdy plants. They require moderately rich soil to root in, and must not be kept too far from the glass or given too much heat, as this would produce the same bad results as allowing them to remain crowded in their seed quarters. There may be a desire to have large plants in a short time, but tall forced plants are never so satisfactory when planted out in the open as sturdy ones. We place them in heat for a time after being transplanted, and then transfer them in cold frames, protecting them in severe weather when necessary. We raise many hundreds of young vegetable plants in this way every spring, and always find them exceedingly useful for first crops.

EARLY CELERY.—There is no advantage in sowing Celery too early. The bulk of it is not required until October and onwards, and these plants may be raised in April, but it is always well to have a few early rows, and provision should be made for them now. Our first plants are

visible, and as soon as they appear they will be kept well in the light and always watered. They do not grow so fast as Cauliflowers, but they dislike being away from the light, and overcrowding must also be avoided in their case. In transplanting them for the first time use only a compost of fine loam and manure, and do not plant more than will be really wanted. It is an excellent plan to decide how many plants are required in all such cases as this, because space is valuable under glass in the spring months, and surplus plants should not be tolerated.

Sweet Basil.—This is a valuable herb, but it is not quite hardy. It must be raised in heat and grown under protection. If a little seed is sown in a 6-inch pot and treated like Celery the leaves and twigs will be ready for use in April.

Parsley.—The time is at hand when Parsley is apt to be scarcer than at any time during the year. The winter does not kill it, but it seems to dwindle in the cold spring months, and many of the plants are now very bare. If a sprinkling of soot, guano, or a little short manure is spread round the plants and the surface stirred they will be greatly benefited. At the same time, it must not be forgotten that all Parsley plants of last year will run to flower as soon as the fine weather comes, and fresh plants must be raised annually. A row or a small bed may be sown the first time the ground is in good order, and the plants from this will be ready for picking by May.

Seed Potatoes.—Planting early Potatoes will soon demand attention. It is a great advantage to have the seed tubers in good order at planting time. If the shoots are quite dormant it will take them a long time to begin growing. On the other hand, if the growths are too long and spindly they will be severely checked in coming in contact with the cold soil, and this is very injurious to the well-being of the crop, but if the shoots are of medium length, very robust, and healthy they will produce capital stems and a fine crop. To have them in the latter condition spread all early Potato tubers out in a single layer now in a place fully exposed to the light but away from frost. They may or may not be covered with a little soil. We have quantities of ours packed in shallow trays and placed in a Peach house, and they are sprouting beautifully. Where it is intended to cut large tubers into several sets do not leave this undone until planting time, but cut them at once and allow them to heal before being planted. By giving attention to these points no blanks will occur.

Kidney Beans.—Keep those coming into flower in a dry atmosphere, but give them plenty of water at the roots. Syringe them well after they are out of flower. Gather all the pods before the beans form in them, and sow more seed once a fortnight, as they will grow fast now and prove highly acceptable.

PLANT HOUSES.

Primulas.—Seed of single and double Chinese varieties should be sown at once where the plants are required in full bloom by the end of October. Sow the seed on the surface of fine soil composed of loam and leaf mould in equal proportions with a good dash of sand added. Pass the whole through a fine sieve and make the surface as level as possible. Do not cover the seeds, but water gently with a fine-rose can. Plunge the pots or pans to prevent the soil drying, and cover the surface with a square of glass with damp moss laid on the surface, and place in a temperature of 60°. As soon as the seeds germinate remove the moss and gradually expose the seedlings to light and air.

Primula obconica.—From seeds sown now some excellent plants in 6-inch pots will be produced for flowering next autumn and winter. Sow the seed in the same way as advised for the Chinese Primulas, but when the seedlings are once up slightly cooler treatment will be found advantageous.

Tuberous Begonias.—The seed of both single and double varieties may be sown at once on the surface of even finer soil than that advised for Primulas. It is a good plan to scatter a little sand on the surface of the soil before the seed is sown; too much is an evil rather than otherwise. Be also careful in watering not to wash the seed in deeply. They are best started by covering the pots in the manner described for Primulas and then plunging the pots under handglasses, so that they can be protected from drying influences. Directly the seed has germinated air and light must be carefully admitted, or the seedlings will damp off. Be careful also that they never become dry, or they will disappear rapidly.

Rhodanthes.—For all ordinary purposes the seed may be sown thinly in 5 and 6-inch pots filled with a compost of good fibry loam, one-third leaf soil, and one-seventh of manure with a little sand added. Cover the seed with fine soil. If the pots are stood in a temperature of 55° to 60° the seed soon germinates. When large enough thin the plants, leaving them about 1 inch apart. Place them close to the glass, and gradually harden to cool treatment, or they will draw up weakly. Dwarf plants are produced by sowing the seed in pans and boxes and then transplanting them into the pots directly they are large enough. In doing so the seed leaves should be just above the surface of the soil.

Nicotiana affinis.—The seed of this easily grown, but useful decorative plant, must be sown thinly on the surface of a pan and placed in heat. When the seedlings are large enough prick them off singly into other pans or boxes 2 inches apart, and from this position they can be placed into 5-inch pots. If large plants are needed they can be afterwards transferred into pots 2 inches larger. From seed sown now plants may be had in flower by the end of June.

Statice Suworowi.—Although useful in beds and borders outside this is charming for decorative purposes when grown in 5-inch pots. The seed should be sown thinly in pans, and when the plants are large enough transfer them into 2-inch pots, and from these into the size in which they are to flower. In their early stages they do well in an intermediate temperature, but by the time they are in their largest pots they should be grown perfectly cool. Be careful not to allow them to become root-bound in the small pots before transferring them into the larger ones.

THE BEE-KEEPER.

PRACTICAL BEE-KEEPING.—No. 29.

An extractor wisely used is no doubt of very considerable advantage in an apiary. In the past, however, this means of increasing the honey harvest has been, and is in certain instances even yet, grievously misused with the worst results. There are certain rules which ought in every case and under all circumstances to be observed, and if due care in their observance is taken an increased yield of honey of equally good quality will be the result, and the bee-keeper will accordingly derive an advantage in more ways than one by using an extractor in this common-sense practical manner. These rules are

1, No honey to be extracted except from sealed cells.
2, No honey to be extracted from combs containing brood and eggs.

The advantage of allowing honey to ripen before taking it from the cells is of manifest importance. Schemes and contrivances for artificially maturing unripe honey have been invented, and they may to some extent answer the purpose for which they are called into existence; but it is perhaps more to the point to inquire whether there is any real necessity to take honey in quantity from unsealed cells. In case of disease, and possibly in late autumn, some small quantities of honey which remain in unsealed cells may need extracting; but it is not against the practice of extracting these small quantities that we protest, because it may in some instances be absolutely necessary to do so, but against the practice of wholesale extracting in the honey season proper with a view to enabling the bees to more rapidly store the incoming harvest. The argument used by those who advocate the continual emptyings of the combs by means of the extractor is, that by doing so the cells are set free and ready for refilling in much less time than they would have been had the bee-keeper waited until the honey was ripe and the bees had sealed over the cells. This may be true to some small extent, but it only holds good when there is but a small stock of ready built combs available; for it has already been pointed out—not once, but upon many occasions during the last twenty years—that if the filled or partially filled combs are removed, and a set of empty combs is placed beneath them, the partially or wholly filled combs will ripen, or be completely filled and then ripen as the case may be, with almost the same certainty as if they had been allowed to remain in their original position. The bees will at once commence to fill the cells which are empty, and the fresh space thus afforded being continually increased, the top tiers of combs filled with honey will be gradually ripened, and may be removed at the convenience of the bee-master. Now, this is surely a great advantage. In the one case it is necessary for the bee-keeper, however busy he may be—and June and July are very busy months with most people in country districts—to be continually extracting from and replacing the emptied combs; while, on the other hand, no other manipulation is necessary except that of lifting the set or sets of filled or partly filled boxes and placing beneath it a set of empty combs. All the tiers may be allowed to remain until the harvest is over, they will then contain fully ripened honey and nearly every cell will be sealed. Such boxes will contain very few bees, and may be taken with a minimum of trouble.

By this method the bee-keeper secures the same quantity of

honey of a vastly superior quality, and at a much greater convenience to himself. It saves the addition of a ripening machine to the already numerous appliances of the apiary, and has in fact no single drawback. Those who have experienced the toil and labour consequent upon frequent extracting in June and July will appreciate the comfort of having one busy time instead of continual—almost daily—trouble in the apiary. It is, of course, necessary to have on hand a stock of empty combs ; but if these cannot be obtained full sheets of foundation may generally be used with advantage. In every case where it is possible to secure them it is in my experience preferable to have at least three sets of super combs to every stock which it is intended to work for extracted honey. Combs which have to be passed through the extractor must be well and firmly built ; the more even they are, and the less time and trouble will be expended in uncapping and throwing out the honey. Each comb should be built well within the frame and fastened firmly to the bottom bar.

The American wired foundation is very good for use in frames which have to pass through the extractor soon after being built. If such foundation is placed firmly in the frames and kept in position neat level combs will result. The frames must be carefully spaced, otherwise bulged and hollow combs will be constructed, and the bee-keeper who has to deal with either of these freaks—if they may be so called—of comb-building will have good reason to remember in future that it is easy to uncap a level comb, but most difficult to perform the same operation on a comb which, like a Derbyshire landscape, is varied with numerous intervening hills and dales. If, however, a bee-keeper has the misfortune to possess such combs he should before replacing them in the hive cut away all inequalities, and if the comb is not in the centre of the frame, place the frame of comb on a board, such as has been before described for use when fixing foundation, and press the comb into position, retaining it in its place if necessary by a few ties of tape or thin string—preferably the former. After a few days the ties may be removed, and if the combs are properly spaced equal and good combs will then be produced.—FELIX.

(To be continued.)

DIRECT INTRODUCTION OF QUEENS.

THERE have been, as most know, two systems submitted to the public to accomplish the above—viz., the "Hallamshire law," one of Nature's undeviating truths, and Pond's system, generally called in this country, "Simmins' Direct System." This latter, as explained by Mr. Pond, depends solely in giving the queen in such a way that she is not alarmed, and so does not excite the suspicion of her future subjects.

To introduce a queen by this theory the old queen was removed in the daytime, and after dark when the bees were quiet the strange queen was given them alone. I have never doubted the success of this plan, as I had long practised uniting bees in accordance with the same theory, which I had arrived at from the following observations. When a strange bee with dishonest intentions tried to enter a hive it always hesitated about it, and if it did this it was at once set upon by a hive bee. This was kept up till dark, after which no guard was kept outside ; thus I concluded that at night bees would readily unite, as at this time they would treat each other as friends. Since then I have done all my uniting after dark, and never use scent, syrup, or anything. I have not always been successful, but by remembering the circumstances connected with these I have been enabled to trace the cause of failure to, at the time, unknown causes.

This Pond's system of introducing queens to stocks in normal condition the evening of the same day the other was removed seemed much better than my law, as I insist the bees must have been queenless forty-eight hours, nor must they have had the means of rearing a queen during this time ; and as it was much praised—though singular to state most, if not all the reported successes, were with stocks that had been both queenless and broodless forty-eight hours at least—I determined to thoroughly test the matter last summer, and I now publish the result for the information and guide of all during the coming season. The plan or system has recently been described in the Journal by "Felix," therefore I need not repeat it.

On the third or fourth day I invariably found queen cells, on the seventh or eighth day I found them sealed. If the queen was heavy with eggs, or in full laying when first given, she would always present the appearance of a non-laying queen, proving conclusively that the bees had not accepted her as the new mother. After the cells are sealed she was generally allowed to destroy the nymphs, and in about eleven or twelve days after her introduction she would begin to lay again. This was the rule, the exceptions were that the queen cells were protected right forwards. In one I tore down the nymph was fully matured and marched about in my hand, though the queen I had given was quite safe, but in many cases the queen introduced disappeared about the eighth day. Thus the system seems peculiarly one for queen dealers.

I had much better success in removing the old queen by lamplight at night, and giving the new queen at the same time, without any preparation whatever, but even in this case queen cells were always started. The person under whose name it is announced in this country (S. Simmins) admits in the *British Bee Journal* for June 23rd, page 267, that the bees show signs of queenlessness and build queen cells, which in a preceding paragraph he denies are sealed. I am quite satisfied they are all first sealed before the new queen is allowed to destroy them ; therefore, considering such enormous loss in egg laying—ten or twelve days—I claim that my law puts all known systems in the shade. First, because it is absolutely safe, never a failure ; second, there is only a first loss of two days, or if the queen is not in laying order, then two days more. I have also discovered how virgin queens may be introduced equally as certain, but this I must reserve for another letter.

In "Felix's" letter on the subject he declined to enter into any controversy on the matter, or give credit to any person to whom one might feel indebted for its benefits.

Now, as a matter of fact, we all like to know who benefited us with the great discoveries and inventions which adds to our everyday comforts, and we like to honour them. But "Felix" is not consistent. He first said he would honour no man, then subsequently he honours Mr. Simmins instead of Mr. J. E. Pond, jun., of the U.S., who first published it in the *British Bee Journal* long before Simmins took it up, and this was long after he had published it in America.—A HALLAMSHIRE BEE-KEEPER.

NOTES ON BEES.

SINCE February the 4th, the first day the bees carried pollen from the Snowdrops, the weather has been wintry, with much snow. Our bees have not suffered from the snow, owing to their airing themselves so well during the previous mild weather. Nearly every one of our stocks has more bees now than in October. The bees never require stimulants to cause them to breed, and our great care with them is to have them well supplied with all that is necessary for the internal economy of the hive, having the crowns well covered with dried grass above a quilt of some sort. There is no fear of brood being chilled in such well-covered hives, and a properly made ventilating floor, in cold weather.

Since the 9th of January, the first day the bees carried pea-meal, they have carried in about 5 lbs., and much water, a sure indication that breeding is going on well. In a previous article I described my float feeders, being the only method that float feeders can be used without killing bees, whether it be with sugar or water. One thing I neglected to mention—viz., when the upper side of the float is smooth and damp many bees are caught when they turn their back towards it, and die in a short time. To prevent this I buoy up the float with pieces of cork, and stretch a piece of calico on top of float ; this contrivance is as effective as it is simple.—LANARKSHIRE BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

W. & J. Birkenhead, Fern Nursery, Sale, near Manchester.—*Catalogue of Ferns and Selaginellas (illustrated).*

J. R. Pearson & Sons, Chilwell, Nottingham.—*Catalogue of Pelargoniums, Chrysanthemums, &c.*

J. E. Dixon, Gainsborough.—*Catalogue of Vegetable and Flower Seeds.*

TO CORRESPONDENTS

*** All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Sowing and Planting Asparagus (*K. J. H.*).—We forwarded your letter to Mr. Abbey, and have received his reply, but too late for

insertion in the present issue ; nothing, however, can be lost by the little delay.

Exhibiting Tuberous Begonias (*G. C.*).—We consider it improper for flowers of Tuberous Begonias, or any other flowers, to be brought in a box and tied on plants in an exhibition tent for the purpose of winning prizes. The practice ought not to be allowed by show authorities, and if such additions to the plants were brought to the notice of judges they would be justified in disqualifying the collection.

Musa Sucker (*W. J.*).—You may with safety to the parent plant remove the sucker 3 feet high, and instead of its injuring the old plant it will contribute to its vigour. In taking off the sucker be careful not to injure the roots of the old plant, but take away as much soil as you can, so as to remove the sucker with some roots, and without breaking it ; forcibly and sharply pulled, it will snap off at the surface like a Carrot.

Insects on Agathæa Leaf (*H. P.*).—The objects on the leaf are the cast-off skins, "rust," as it is called, and dead bodies of a very small mite of the Phytoptus group. This is probably allied to the species which occur on the Alder and Birch. It would be impossible to determine the exact species without the inspection of a number of fresh specimens, as they are difficult to name. However, this species and others of the tribe are in no wise hurtful to the life of the plants or trees they frequent, except in very rare instances, but they are sometimes numerous enough to disfigure.

Hyacinth Roots Defective (*H. C.*).—The roots are insufficient in quantity, also weak, and some of them discoloured, but not decayed. We are unable to account for the paucity of roots. Are you satisfied the soil was not too dry when used? If it was suitable in composition and moisture, roots ought to have issued more plentifully from the bulb. The discoloration may be due to a too free use of the artificial manure, and that is possibly the case. If you had applied less of that and more water, we think a very good spike would have developed. The soil was too dry in the centre when we examined it ; and we suspect the flowers will yet expand, and form a very good spike.

Gardenias (*H. P.*).—With no data to guide us as to cultural details we are unable to indicate the cause of your plants failing—"going off," as you say—somewhat suddenly. If the sprays are fairly representative your plants are in an enfeebled state, the stems being thin, and the leaves lacking substance. Is not the root action defective? We advise you to procure cuttings from a vigorous stock and raise young plants in the meantime, giving the best support you can to the plants that are evidently the reverse of satisfactory. Not knowing the treatment to which they are subjected we cannot give a more precise reply.

Transplanted Vine (*J. S.*).—The Vine transplanted from the back wall to a position in front, replacing another kind, will no doubt succeed, as it had a quantity of fibrous roots, which we presume were carefully preserved and spread out in the new position, fresh compost being worked in amongst them, the Vine in fact being properly planted. The vinery not being started for some time yet will be an advantage rather than otherwise ; all that is necessary is to keep the soil moist, but if moist now no water will be necessary until the buds start, when we advise a good supply of tepid water, mulching the surface as far as the roots extend with short manure a couple of inches thick, which should also be kept moist. Beyond syringing a little more frequently than for established Vines, and keeping the ventilators rather closer if that can be done near the transplanted Vine, no special treatment will be necessary.

Vine for Greenhouse (*J. E.*).—A Vine would succeed provided you maintain an ordinary greenhouse temperature—viz., 40° to 45° at night, and 45° to 50° in the daytime by artificial means. A Black Hamburgh would be the most suitable variety. The stage as you propose making it would answer, but we should not use the spent tan or sand, being content with the shingle. Of the plants you name, Amaryllises, Gloxinas, and Coleus would not succeed with the others. We should advise you confining yourself to greenhouse plants. If you have the Vine you will not need the climbers, as those you name—viz., Mandevilla suaveolens and Lapageria rosea, would require all your available roof space. Mina lobata is a half-hardy annual. Others that you may raise from seed are—Rhodochiton volubile, Lophospermum scandens, Maurandya Barclayana and var. alba, M. purpurea grandiflora, Tacsonia ignea, T. Van Volxemi, Tropæolum Lobbianum Napoleon III. We do not notice in your list of plants the very desirable Zonal, double, and show, as well as fancy Pelargoniums, which are indispensable. The wires for the trellis are best fixed horizontally about 6 inches apart.

Daffodils in Pots (*J. W.*).—No wonder you are charmed with Daffodils grown in pots, the wonder is that everybody does not grow them. The plants should be kept in a light airy position after flowering, duly supplied with water and occasional supplies of liquid manure, assigning them a position in a cool house or cold frame, where they will have plenty of light, taking care to harden them off previously if they have been grown in heat or forced, and in April they may be placed in a sheltered position outdoors, plunging the pots to the rim in ashes, where they may remain till the growth is matured, giving water as required until the foliage dies down. They should be repotted before growth commences, or in July or August, plunging in ashes. The soil being moist they will not require any water, as the rain will be sufficient to keep the soil moist. It is advisable to cover the pots about 4 inches deep. Care must be taken to remove them from the ashes when the growths are an inch or so above the pots, placing them in a cool frame, and shading from sun until the growth is quite green, when they should have all the light possible. From the frame they may be transplanted to the greenhouse or forcing house as required.

Raising Liliums from Seed (*T. M.*).—If you had sown the seed as soon as it was gathered in a mixture of sandy loam and peat kept uniformly moist in a box in the greenhouse, or covered with cocoa-nut fibre refuse in a frame, then placed the box in a warm frame in spring, you would have gained time. Sow now on soil previously well watered cover closely with squares of glass to prevent the moisture evaporating, also shade the glass from the sun. The chief point is to maintain constant and uniform moisture in the soil, as if it gets dry now and then, even for a short time, germination, which is slow, will be materially retarded if not prevented. You give no idea of your cultural conveniences, therefore we are unable to give information precisely applicable to your case. Some of the seed may germinate in the summer, especially in a moist warm frame, but the whole of it may not do so till next spring. You had better therefore not disturb the soil till then, and the plants that appear this season may be left to grow in the box. A cool frame will be suitable for seedlings in summer, or the box may be stood in a shaded place outdoors, such as behind a wall, in hot weather, the soil being liable to get too dry in the full sun.

Top-dressing an Uneven Lawn (*G. A. B.*).—If you cover the grass 2 to 4 inches deep with soil you will ruin the lawn not only for the present season, but for ever. It would in effect destroy the finer and better description of grass, only the coarser kinds and weeds being able to grow through so thick a covering ; besides, you may not have calculated what covering the ground 2 to 4 inches deep with soil means. An inch is equal to 15 cubic yards of soil per acre, or twenty to twenty-five cartloads of compost in a fit state to apply as a surface dressing. Two inches depth of soil is equivalent to thirty, 3 inches to 45, and 4 inches to 60 cubic yards, or respectively twenty, forty, sixty, and eighty cartloads of compost per acre. The first of those quantities, or twenty cartloads per acre of good compost, is a sufficiently heavy dressing, even when the ground is uneven. It is not advisable to mix grass seeds with the compost. It should be put on with as little further delay as is practicable, spreading evenly, and when in good working order raking it over with a rake having long teeth. A rake similar to a hay-rake would do, only having iron instead of wooden teeth. This will fill up the inequalities. Repeat the raking early in April, and immediately afterwards sow Grass seeds over it, rake lightly after sowing, and roll it well at the same time.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*R. H. C.*).—Passe Crasanne. (*J. S. Preston*).—Your Pears are correctly named.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*R. P.*).—The plant, we think, is Dendrobium nobile var. cœruleseens, but the flower is, as you say, very diminutive. We have seen large flowers of this variety very little inferior in colour to D. nobile nobilius. (*A. M.*).—All the flowers you have sent represent varieties, not species, of plants, and can only be named by comparison with others accurately named and flowering in a large collection. As may be observed above, only species of plants are named in these columns. (*G.*).—1, Acacia armata ; 2, Chorozema cordatum. (*J. M.*).—Yes, it resembles Aucuba japonica longifolia, or angustifolia, as it is also named. Try Chrysanthemums Cérès and Mrs. C. Carey ; they will probably suit you.

COVENT GARDEN MARKET.—FEBRUARY 22ND.

PRICES remain as last week. Arrivals shorter with a steady trade.

VEGETABLES.

	s.	d.		s.	d.		s.	d.		s.	d.
Artichokes, dozen	1	0	to	2	0	Lettuce, dozen	0	9	to	1	3
Asparagus, bundle	0	0		0	0	Mushrooms, punnet	0	6		1	0
Beans, Kidney, per lb.	1	0		0	0	Mustard and Cress, punt.	0	2		0	0
Beet, Red, dozen	1	0		2	0	Onions, bunch	0	3		0	0
Broccoli, bundle	0	0		0	0	Parsley, dozen bunches	2	0		3	0
Brussels Sprouts, ½ sieve	3	6		4	0	Parsnips, dozen	1	0		0	0
Cabbage, dozen	1	6		0	0	Potatoes, per cwt.	4	0		5	0
Capsicums, per 100	1	6		2	0	,, Kidney, per cwt.	4	0		0	0
Carrots, bunch	0	4		0	0	Rhubarb, bundle	0	2		0	0
Cauliflowers, dozen	3	0		4	0	Salsafy, bundle	1	0		1	6
Celery, bundle	1	6		2	0	Scorzonera, bundle	1	6		0	0
Coleworts, doz. bunches	2	0		4	0	Seakale, basket	1	0		1	3
Cucumbers, each	0	6		1	3	Shallots, per lb.	0	3		0	0
Endive, dozen	1	0		2	0	Spinach, bushel	1	6		2	0
Herbs, bunch	0	2		0	0	Tomatoes, per lb.	0	6		1	0
Leeks, bunch	0	3		0	4	Turnips, bunch	0	4		0	6

FRUIT.

	s.	d.		s.	d.		s.	d.		s.	d.
Apples, ½ sieve	2	6	to	4	6	Oranges, per 100	2	0	to	5	0
Nova Scotia and Canada barrel	10	0		18	0	Pears, dozen	3	0		6	0
Cobs, 100 lbs.	45	0		0	0	Pine Apples, English, per lb.	0	0		0	0
Grapes, per lb.	3	6		5	0	St. Michael Pines, each	3	0		5	0
Lemons, case	10	0		15	0						

PLANTS IN POTS.

	s.	d.	s.	d.
Aralia Sieboldi, dozen ..	6	0	to 12	0
Arbor vitæ (golden) dozen	6	0	9	0
,, (common), dozen..	0	0	0	0
Azalea, dozen	24	0	42	0
Cineraria, dozen	8	0	12	0
Cyclamen, dozen	12	0	24	0
Dielytra, per dozen ..	12	0	18	0
Deutzia, per dozen ..	6	0	9	0
Dracæna terminalis, doz.	30	0	60	0
,, viridis, dozen..	12	0	24	0
Epiphyllum, dozen	10	0	18	0
Erica, various, dozen ..	9	0	18	0
Euonymus, in var., dozen	6	0	18	0
Evergreens, in var., dozen	6	0	24	0
Ferns, in variety, dozen	4	0	18	0
Ficus elastica, each ..	1	6	7	0
Foliage Plants, var., each	2	0	10	0
Fuchsia, dozen..	0	0	to 0	0
Genista, per dozen ..	6	0	12	0
Hyacinths, dozen	6	0	12	0
,, (Roman), doz.	9	0	10	0
Hydrangea, dozen	0	0	0	0
Lilies Valley, dozen ..	18	0	24	0
Lilium lancifolium, doz.	0	0	0	0
Marguerite Daisy, dozen	9	0	12	0
Myrtles, dozen..	6	0	12	0
Narciss, per dozen ..	8	0	10	0
Palms, in var., each ..	2	6	21	0
Pelargoniums, dozen ..	0	0	0	
,, scarlet, doz.	6	0	9	0
Poinsettia, dozen	0	0	0	0
Solanum, dozen	9	0	12	0
Tulips, dozen pots	6	0	9	0

CUT FLOWERS.

	s.	d.	s	d.
Abutilons, 12 bunches ..	3	0	to 6	0
Anemones (French), 12 bunches	3	0	4	0
Arum Lilies, 12 blooms ..	4	0	6	0
Azalea, 12 sprays	0	8	1	0
Bouvardias, bunch	0	6	1	0
Camellias, 12 blooms ..	1	6	4	0
Carnations, 12 blooms ..	1	0	3	0
Christmas Roses or Hellebore, 12 blooms ..	0	6	1	6
Chrysanthemums, 12 bchs.	12	0	18	0
,, 12 blooms	0	0	0	0
Cyclamen, 12 blooms ..	0	6	1	0
Daffodils, Double, 12 bchs	6	0	12	0
,, Single, 12 bchs	12	0	18	0
Daisies, 12 bunches ..	2	0	4	0
Epiphyllum, 12 blooms ..	0	6	0	9
Encharis, dozen	4	0	6	0
Gardenias, 12 blooms ..	12	0	24	0
Hyacinths, Roman, 12 sprays ..	0	6	1	0
,, French, 12 bnnches ..	1	6	4	0
Lapageria, coloured, 12 blooms	1	0	1	6
Lilium longiflorum, 12 blooms	6	0	9	0
Marguerites, 12 bunches	2	0	6	0
Lilies, White, 12 bunches	0	0	to 0	0
,, Orange, 12 bunches	0	0	0	0
Lily of the Valley, 12 sprays	0	6	1	0
Mignonette, 12 bunches	3	0	6	0
Narciss, white (French) 12 bunches	2	0	4	0
Narciss, various, 12 bchs	3	0	6	0
Pelargoniums, 12 trusses	1	0	1	6
,, scarlet, 12 trusses	0	6	0	9
Poinsettia, 12 blooms ..	2	0	5	0
Primroses, 12 bunches ..	1	0	3	0
Primula (single), bunch..	0	6	0	0
,, (double), bnnch ..	0	9	1	6
Roses, Red, 12 blooms ..	6	0	9	0
,, (indoor), dozen ..	3	0	4	0
,, Tea, dozen	1	6	6	0
red, dozen (French)	1	6	3	0
,, yellow	4	0	9	0
Snowdrops, 12 bunches ..	1	0	2	0
Stephanotis, 12 sprays ..	0	0	0	0
Tropæolum, 12 bunches	2	0	3	0
Tuberoses, 12 blooms ..	2	0	3	0
Tulips, dozen blooms ..	0	9	1	0
Violets, 12 bunches.. ..	1	0	1	6
,, (French), bunch	1	6	2	0
,, (Parme), bunch	5	0	7	0
White Lilac, per bunch ..	5	0	6	0



LESSONS BY THE WAY.

THE returns collected from 14,000 parishes in Great Britain, and from each police district in Ireland, have enabled the Agricultural Department to form estimates which have now been issued, and of which we have received a copy. These estimates go to show that the year 1887 was one of the worst ever experienced by British farmers. In proof of this we may give some of the averages which have been worked out, as a starting point for inquiry into the reason of such a lamentable state of things.

	1887. Bushels.	1886. Bushels.	Ordinary average.
Wheat	31·97	26·89	28·07
Barley.	31·12	32·32	34·13
Oats	34·25	38·46	39·04
Beans	22·47	27·09	30·35
Peas	24·43	27·31	28·46
	Tons.	Tons.	Tons.
Potatoes ...	5·26	4·31	4·41
Turnips ...	9·89	14·75	14·41
Mangolds ...	14·61	20·13	19·05
Hay	1·27	1·54	1·50
	Cwt.	Cwt.	Cwt.
Hops	7·18	11·07	7·84

These figures go to show that only Wheat and Potatoes afforded a yield above the average, all the other crops being below it in the following proportions:—Barley, 3 bushels an acre; Oats, 4¾ bushels; Beans almost 8 bushels; Peas, 4 bushels; Turnips, 4½ tons; Mangold, 4½ tons; hay, 4½ cwt.; Hops, about two-thirds cwt. We give these figures for what they are worth, and as proving the case in a general sort of way, knowing as we do well that the crops on some farms were far above the average, and also upon other farms crops were much below it. A low average, combined with low prices, tends to show that the year was an exceptionally bad one, and farmers have suffered accordingly.

It must not, however, be forgotten that rent has been greatly reduced, and where, under a really good system of management, the land has been well cultivated, and a high standard of cleanliness and fertility maintained, excellent and abundant crops have continued to yield a sufficient margin of profit. Such results, are perhaps, more common than is generally supposed; at any rate, out of a numerous tenantry only one gave us notice of his intention to quit his farm next Michaelmas. Nor can we wonder at this, when we recall the fact that rents have been lowered by one-third to one-half what they were a few years ago. If only the general practice of farmers were at all as sound and thorough as it ought to be, crop averages would be higher, and the depression much lighter than it is.

In some critiques of the returns of 1887 we are told that under a drought a light crop of hay and roots is a foregone conclusion. Now we by no means agree with this, because we know under high culture both hay and roots were a good crop. We repeat what we have so often said, that if only pasture is well managed we may always reckon upon a full hay crop, but the aftermath will certainly suffer from drought. Of root crops, too, we had really heavy crops of Mangolds, and where Swedes were sown in April or early in May, as is done in Norfolk, they were a heavy full crop. Then, too, in Potato culture there is frequently much poor practice, the ordinary average crop being sadly inferior to that which may be had by thorough cultivation of the soil and the use of pure chemical manures. We have proved this in our own practice for many years, and though we do not recommend Potatoes as a desirable crop for farmers generally, yet when local conditions favour the practice by all means let it be of the highest, for that only is profitable. That practice in Potato culture is low is an absolute certainty, for an ordinary average of 4 tons per acre means this if it means anything; nor can any plea justify such poor results when it is possible to do so much better.

The publication of these agricultural returns is important as a record of the outcome of last year's crops, but it is by no means to be taken as evidence of what farmers can do with the land even in a year of drought. We hold that nine-tenths of the land is not well cultivated and until this fault is set right, and we have the best possible combination of practice with science in the management of farms throughout Great Britain and Ireland, such returns ought not to be received as evidence of what the land will produce. If every farmer had to submit his practice along with its results to a State department for publication we should then have tangible evidence of the prevalence of ignorance among those who essay to do what they can to provide a home supply of corn and meat. That such ignorance does prevail there can be no doubt; why else do we still find so many men clinging to a four-course shift, to the muck cart, to fattening poor imported Irish cattle? In this, as in so many other things, ignorance and prejudice go hand in hand; improvement and change from the practice of our forefathers finds acceptance but slowly at the hands of farmers generally, and the stern teaching of adversity is not turned to account as it ought to be.

WORK ON THE HOME FARM.

The lambing continues in a very satisfactory manner, the lambs generally being strong and healthy, and the condition of the ewes, too, being excellent. With few exceptions they have an ample supply of milk, but there always will be a few delicate animals in every flock however carefully they may be selected, and the lambs of such ewes must be fed with milk fresh from the cow till they are old enough to consume other food. Our dietary for the ewes continues to be Barley straw chaff mixed with Oats, Mangolds, and grass, and they have a few lumps of rock salt to lick. We shall make no change in feeding the ewes till Turnip folding begins, but the lambs will have some bran as soon as they are able to eat it. We shall give them other food when they can take it, and every effort will be made to bring them on for sale as early in the season as possible. In the home flock we have a remarkable number of twins, but in the flock at an off-hand farm there are very few twins. We attribute this difference to the fact of our having had a

better change of tups for the home flock, and we shall apply the lesson by having an extra one or two for each flock another season. As a rule we have had about one to every sixty ewes, but we know that in some flocks there are two to every hundred, and it is probably a good plan. The price of really well-bred tups has fallen so considerably that we can very well afford to have a superabundance rather than not enough.

Foot-rot in a flock always becomes more troublesome during the lambing than at other times, from the fact that pregnant ewes cannot be dressed for this disease, because of the risk of injury to them. Let those flockmasters whose sheep are free from the taint of this infectious disease take due care to keep them from contact with a diseased flock, for once it is in a flock there is no permanent cure for it, and it tells sadly upon the general health of the sheep. We have reason to regard it as being equally infectious as scab, which can be cured, but foot-rot always returns in an infected flock whenever conditions are favourable to its development. Lambs soon catch it, and suffer accordingly, not perhaps from any very severe pain in the feet, but they fall off in condition, and show clearly how seriously the complaint tells upon them.

Farm Seed Catalogues.—We have received copies from Messrs. James Carter & Co., 237, High Holborn, and Messrs. E. Webb & Sons, Wordsley, Stourbridge, of their new catalogues of farm seeds. They are copiously illustrated, and worthy of perusal by cultivators of farm crops.

OUR LETTER BOX.

British Bee-keepers' Association (*Bee*).—The above is the only Association of the nature suggested, and many county associations are connected with it. Particulars such as you require can be obtained from Mr. J. Huckle, King's Langley, Herts.

Chemical Manures (*D.*).—Professor Jamieson's manure recommendation circular, being prepared solely for the benefit of members of the different associations, is not offered for sale. You must remember that the calculation of the cost per acre of manures is based upon wholesale rates for quantities of not less than a ton of each sort of manure, and for lesser quantities the price would be necessarily higher. You cannot do better than obtain your supply from a reliable source in your own neighbourhood. The manure we recommend per acre for Potatoes without farmyard manure is 1½ cwt. muriate of potash, 2½ cwt. nitrate of soda, 4 cwt. steamed bone flour, 2 cwt. ground coprolite, 2 cwt. common salt.

Unprofitable Pasture (*Constant Reader*).—Your acre of land "under coarse useless grass," may be ploughed deeply so as to quite bury the old sod, and sown in March with a crop of Oats and Grass seed. As you evidently require a strong growth of nutritious herbage for horses and cows the following mixture may be used:—Crested Dogstail, 4 lbs., Rough Cocksfoot, 8 lbs., Perennial Rye Grass, 10 lbs., Tall Fescue, 4 lbs., Timothy, 4 lbs., Foxtail, 4 lbs., Meadow Fescue, 2 lbs., Yarrow, 1 lb., White Clover, 1 lb., Perennial Red Clover, 1 lb., Cow Grass, 1 lb., Alsike Clover, 1 lb., which gives a total of 41 lbs. of seed—an ample quantity for an acre of land. By ploughing deeply now you will turn up enough soil to enable you to cover the seed without bringing the old sods to the surface. Use a light harrow, passing it over the land once or twice before sowing, and repeatedly afterwards till the seed is well covered. Take care subsequently not to let any of the young pasture develope seed, and apply annually in February a dressing of the chemical manures mentioned on page 142 in our last article on permanent pasture. One word of caution as to coarse Grasses. Rough Cocksfoot and Rye Grass may both be so termed, yet both afford heavy crops of most nutritious herbage, and are to be valued accordingly. Do not pin your faith upon the finer and more delicate Grasses, for they will not answer your purpose.

Grass Manure—Field Fencing (*W. R. R.*).—You will find the formula for Grass manure in our last article on permanent pasture on page 142. Your plan of making a field fence of strained wire with old railway sleepers for posts is objectionable, because old sleepers soon perish, and then down comes the fence. We know no cheaper field fencing than that used by the railway companies. We have at different times used much of this at a cost of 2s. 8d. per length for materials, and 8¾d. per length for labour. Each length consists of an oak post mortised with four holes, an oak stay and four larch rails 10 feet long; the ends of the rails slip past each other in the mortise holes, which makes each length 9 feet long when the fence is erected. The fence is supplied all ready for putting together at the price we quote, and it is put up by farm labourers, but we must own that it was only by close personal supervision we were able to get through the work at the low price mentioned. This field fencing was figured in the Journal a few years ago, but as the number is out of print the engraving is reproduced for the guidance of yourself and others who may desire to erect field fencing of this nature.

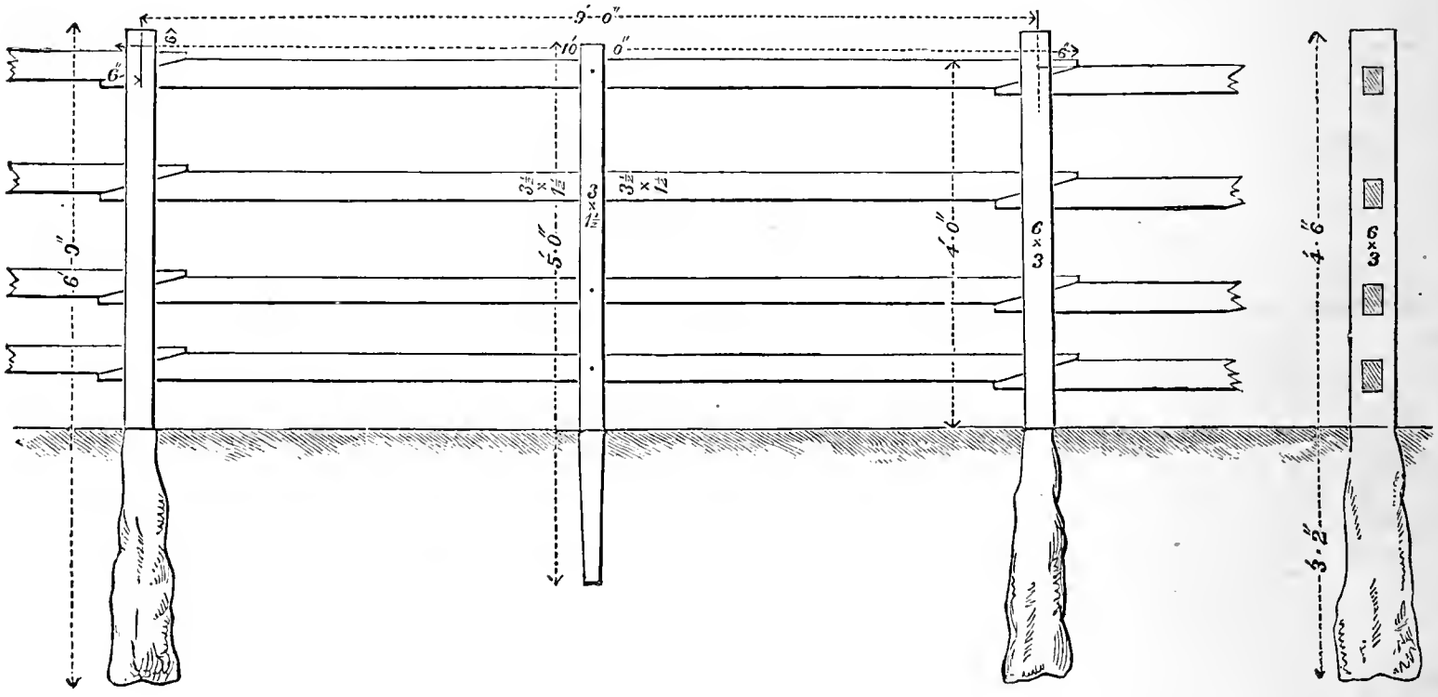


Fig. 22.—FIELD FENCING.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE. 1888. February.	9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of soil at 1 foot.	IN THE DAY. Shade Temperature. Max.	IN THE DAY. Shade Temperature. Min.	IN THE DAY. Radiation Temperature. In sun.	IN THE DAY. Radiation Temperature. On grass	Rain
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 12	29.506	34.0	32.8	W.	39.1	39.2	30.8	58.3	25.8	—
Monday..... 13	29.725	34.4	32.6	W.	38.2	40.2	30.0	72.6	22.9	0.511
Tuesday 14	29.573	34.3	34.0	S.W.	37.3	38.8	31.9	54.8	31.4	0.018
Wednesday.. 15	29.891	35.1	33.8	N.	36.8	38.2	32.2	58.1	28.4	0.039
Thursday 16	30.122	34.4	32.4	N.	36.7	37.1	31.6	57.7	27.9	—
Friday 17	29.990	32.0	29.6	N.	36.3	36.0	30.6	47.3	29.2	—
Saturday 18	29.928	33.0	33.0	N.W.	36.3	40.3	31.2	60.2	25.7	0.086
	29.819	33.9	32.6		37.2	38.5	31.2	57.6	27.3	0.44

REMARKS.

12th.—Fine and generally bright.
13th.—Fine till 9 A.M., then enough snow to whiten the ground; dull day, and more snow in evening and night.
14th.—Snow early, fine day with occasional sunshine.
15th.—A variable day; frequently cloudy, but with a fair amount of sunshine and occasional slight snow showers.
16th.—Dull, with a little snow in morning; fair afternoon.
17th.—Cloudy and cold.
18th.—Sleet shower from 8.30 to 9.30 A.M., then fine, with occasional glimpses of sun and snow and again a flake or two of snow. Snow and sleet in evening.

A dull and snowy week, with uniform and rather low temperature.—G. J. Symons.

RECLAIMING SAND BANKS.

SINCE "Tourist's" "Memories of Margam" appeared in these pages I have received letters from readers of the Journal in England, Scotland, Ireland, and Wales, who have lost much land by the encroachment of sea sand, and as they all ask for full particulars of the reclaiming of the Margam sands I think the information will be most useful if given as an article. One gentleman residing in the neighbourhood of Liverpool gives details of enormous expense in hauling away the ever-encroaching sands from the buildings and gardens in his district, and the moving sand is undoubtedly most destructive to property. Although some may think that the land bordering the shore is only a very small part of the country's surface, it is surprising how large a space is covered with sand, and what trouble it gives about seaside residences. Still I can assure one and all, no matter where they live, or how shifting and extensive their sand hills may be, that if they go properly to work, they may not only fix the sand, but clothe its surface with a pleasing vegetation. In endeavouring to do this many costly experiments were tried by Mr. Talbot before success was reached. The field for operations was a grand one. Our sands border, and are fully exposed to the wide end of the Bristol Channel. They are upwards of 3000 acres in extent, and are deposited along the shore in mounds and vales. In some parts they extend landward for half a mile or more, in others they are narrow, and when sterile the surface is hardly ever still, and the sand moves in clouds with the direction of the wind. Occasionally it is only moved from one bank to another; it is rarely blown out to sea, and the prevailing direction is landwards. I have known ten acres of good land to be completely covered and lost in one winter here, and anyone can readily imagine what a repetition of this would lead to in a generation. I can safely say it would induce anyone to do their utmost to prevent it.

One of our first experiments was to haul large quantities of brushwood down and place this in ridges along the land side of the sand. This stayed its progress for a little while, but only for a little, as the sand soon covered the brushwood and moved on as before. Seeds of all kinds were tried. Bushels of Dock, Thistle, Nettle, &c., were collected in autumn and sown in spring, but the almost constant moving of the sands with the wind either covered the seed too deeply, or wafted it away, as the seedling plants never became visible. Twenty bushels of Broom seed were sown with the same result, and this confirmed the futility of seed-sowing. About this time one point of sand had encroached so far as to reach the main line of the Great Western Railway. Indeed one night the sand drift was nearly stopping the traffic, and this brought an engineer to give his advice as to its treatment, and this gentleman's proposition met with my opposition. His plan was to build a high wall and retain the sand behind it, but from observation I felt sure this would be of no lasting good. I knew the sand would collect behind the barrier until it reached the top, and move onwards as before, but in a much more dangerous form. A very high ridge or a great accumulation of sand is a most dangerous deposit, as it can neither be planted nor removed with convenience. Two hundred acres of pure sand were close behind the point merging on the railway. I had my own way in the end in planting it. That is five years ago. It now resembles a luxuriant field, and not a wheelbarrow load of sand has reached the line since.

I have been told of a case like this where old sleepers were erected as a 6-feet fence to keep the sand off the railroad. Shortly afterwards it was level with the top, when a similar fence was placed upon the first. This, too, was covered on the inside, when a third was erected, only to share the same fate, and when the fence and banks were 16 feet high it was discovered that this plan would not answer, and this is why I again say, do not attempt to fence out sand. Neither would I remove it from one place to another, as so long as it is capable of being blown about it will always prove a nuisance, no matter where it may be, and my advice is to plant in all cases. This is what has succeeded here, but it was only tried on a small scale as an experiment with the others at first.

There is a Rush-like Grass with arched leaves 2 feet long named Ammophila arundinacea, indigenous to sea sand banks, and it is with this only that we have succeeded. It grows here and there in close tufts on the sands, and these tufts furnish a supply of plants for clothing the bare places. The roots of them spread for yards around and penetrate to a depth of 10 feet and 12 feet. They are dug up with a spade, but rooting so deeply they are not cleared out of the sand, but simply cut off about 1 foot below the surface; and although many roots are secured to the Grass at this depth, those left below soon produce fresh and luxuriant growth and clothe the surface again in less than twelve months. The extent of our sands naturally covered with this Grass would not exceed 100 acres, but from this we have dug up and secured as much as has planted 2000 acres. It was not all taken in one year. We have been planting from 200 acres to 300 acres annually for the last seven or eight years, and the plants cut over and replanted this year would grow again from the bottom roots and furnish another crop the second year. At first we only tried the Ammophila on a small scale. The plants were dug up and divided into little pieces that we could hold conveniently in the hand. These were dibbled into the sand at a distance of from 2½ feet to 3 feet each way, and twelve months after planting they were tufts about 1 foot in diameter. This led to more extensive planting, until 2000 acres have been done, and the result has been a perfect success.

It was a serious matter to have 2000 acres of sterile sand to clothe with vegetation. Some asserted it ought to be a government undertaking, others said it would never be accomplished, but perseverance surmounted it all. From four to six men have been employed at it from early in October till April since planting began. Planting is done systematically. One or two men make the holes in the sand, another one or two dig up the plants and carry them to where they are wanted, and a couple of boys insert them. The holes are made with a dibble about 3½ feet in length. It has a cross head for the hands, and about 14 inches from the point there is a projecting piece of iron on which to put the foot to press it in when necessary. The point is shod with iron, and it is large enough to make a hole 3 inches in diameter. It is inserted every time up to the projecting iron. The holes are thus 1 foot deep and the plants are pushed down to this depth. The boys place them in and fix the sand to them with the heel of their boot. It is important that they be planted at least 1 foot deep, because immediately after planting the sand may be blown from them to a depth of 6 inches or more. This has happened many times, but being inserted deeply they still retain their hold. We have also had the sand blown on them, but it is astonishing how the growth scrambles through, and less harm is done by covering than uncovering. A colliery manager in South Wales who was troubled with the sand blowing on and blocking their railroad to the pit was induced to adopt our plan two or three years ago. He asked me how "far they should be planted apart." My reply was from 2½ feet to 3 feet. He had a rod made to measure from plant to plant, and soon found measuring so expensive and tedious as to be inclined to give planting up; but it is quite unnecessary, and I prefer pushing on by guesswork.

Now comes the question, "What of the expense?" This is very

moderate indeed, and I have computed that the whole of our expense of planting will average 6s. 6d. per acre. The plants become effective as soon as put in, and in the second or third year after planting they meet everywhere in a close mat. This forms an excellent cover for game, particularly hares, and I may remark that the Ammophila has a peculiar habit of succeeding best where the sand is deepest, driest, and most exposed. It does not grow so well in a damp place, and the drier and hotter the summer the more luxuriant does it become. It rather objects to impure sand, and where our ridges of brushwood have decayed the Ammophila is not so healthy as on other parts. Finally I would say no one need have any hesitation in spending their money in planting sands in the manner above indicated. They may rest assured it will not be thrown away.—J. Muir, *Margam Park, Port Talbot, South Wales.*

IS CHISWICK TO GO?

Under this heading there appears in your last issue an article which to my mind fails to attain the object the writer had in view—viz., the welfare of the Royal Horticultural Society. The gist of the statement appears to be that the Committee has committed the Council to an "adventurous policy" as opposed to a "recuperative" one, and that the Fellows at the general meeting endorsed this policy without knowing what they were about. Now, there is an old adage that "one story is good until another is told," and I should feel obliged if you would allow me to submit a different version, and in doing so I shall endeavour to confine myself solely to the work done by the Committee. The Committee had only been a few weeks in existence when the annual meeting occurred, necessitating a report to be made dealing actually only with matters of pressing urgency, but prospectively to other subjects which must of necessity occupy the attention of the Committee almost immediately. As to the statement regarding Chiswick, wherein you gather from the annual report of the Council that the yearly expenditure is £1300, and that the sale of "garden produce" is in round figures £500, thus leaving a deficit of £800 a year. Doubtless this is so, but the Committee has not up to this time had any opportunity of dealing with Chiswick even in the least degree. This is one of those things to consider for which they are called into existence to help the Council. In a word, the work of the Committee is to co-operate with the Council and to realise as far as possible the idea sketched by your correspondent "F. W. B.," page 144. Although it cannot be expected that they will ever render Chiswick entirely self-supporting, much less a profitable undertaking. Indeed, the profit of such a garden is to be looked for in the results of its experiments and in the advantages it offers to the Fellows in return for their subscriptions rather than in a formal balance-sheet. So much for Chiswick and the Committee.

Now a word as to the expenditure of £700, which it is stated that the Committee has recommended. In reply to this I can only say that the only expenditure which the Committee has recommended on account of new offices is £120 a year for three years, and the hire of the Drill Hall for Shows for one year £100—total, £220. Now, seeing that the Society is driven from Kensington, where its annual expenditure, without supply of plants, &c., was over £600 a year; and, further, that a new home was immediately imperative, and that the same has been obtained for £220 a year. I submit that a saving of £380 is effected, because it must always be borne in mind that until further reductions and economies are effected all other outgoings upon the present scale of expenditure remain.

Whether the Council should have migrated in the direction of Chiswick or the City can, I think, admit of but one reply. If they had gone to Chiswick doubtless the £220 a year would have been saved, but only, I believe, at the expense of losing a still larger number of subscribers, coupled with the absence of the general public at their fortnightly Shows; whereas by putting themselves more in touch with the public on these occasions the public will mark their appreciation of the facilities offered by better patronising the Shows brought closer to their doors. As a matter of fact an echo has already been heard from the City which bears out the hopes of the Committee in respect to this.

As this is the extent to which the definite operations of the Committee have as yet extended, I do not feel it incumbent on me just now to say more except that until the lower rates of subscription are established and the country districts are mapped out, local Secretaries appointed, and the generally comprehensive machinery which the Committee has in view be set going, the new Council and the Committee must, to do good work, heartily co-operate in the future, as they have done in the past, looking forward with confidence to the cordial support of all classes of horticulturists, at least in all matters of principle.—Geo. Deal, *Hon. Sec. to the Fellows' Committee.*

[We readily insert this excellent letter, but notwithstanding the admitted ability and great business capacity of Mr. Deal we are bound to observe that he leaves the real position of the Society as represented in our article on page 143 untouched. Nothing confessedly can be added to its estimated income, and nothing is really subtracted from its estimated liabilities. It is true Mr. Deal only admits an expenditure of £220 as recommended by Dr. Masters' Committee, but the further estimated expenditure of £234 is directly involved for exhibitions, the only purpose for which the hall was taken; and, further, it is clearly stated in the report that the Committee strongly recommended the appointment of a paid Secretary, and one is advertised for at a salary of £200. Add this and the estimated cost of Shows (£234) to the £220 admitted, and we have £654. This is our justification for saying that speculation to the extent of "between £600 and £700" was indulged in.

It is necessary to say a word relative to the lapsed expenditure of £600 at South Kensington, because we find an impression obtains in some quarters that this sum was included in the £850 for establishment expenses on page 143. Not one penny of it was included, nor can the lapsed amount be taken into consideration in any way in respect to the future of the Royal Horticultural Society, and it is with the future we have to deal. We fear the alleged "saving" of the lapsed £600 has had an influence that it cannot legitimately bear; it is a mere shadow of the past, not a substance affecting the present position. We expected, too, when writing last week that a misapprehension existed as to the applicability of the special fund promised of £1210; we have since learned from more than one source that such was the fact, and that the true position of the Society was not present to the minds of the Fellows when the report of the Committee recommending the speculative policy was adopted.

But, it may be asked, and with a great semblance of plausibility, Why did the Council accept the report? When it is remembered that the Committee is composed in part of the members of the Council, and that the majority must rule, opposition under the circumstances would have amounted to mere obstructiveness. The truth is, the decision was arrived at under the impulse of the meeting; and the Council was not, nor can it be, an independent and responsible body when some of its members belong to an outside Committee, and thus act in a dual capacity.

Dr. Masters' Committee, on which so much depends, was excellent in inception but erroneous in principle, inasmuch as by its mixed nature its responsibility is incommensurate with its power for doing good on the one hand or making mistakes on the other. Its members are unreservedly credited with the best of intentions towards the Society which they practically govern, but not one of them can be more earnestly desirous than we are for its prosperity, and we are convinced the best policy is to preserve Chiswick, and that this can only be done by frankly making its actual position known to the horticultural world. This has been the line pursued by this Journal on critical occasions in past times, and it cannot consistently be abandoned now.

And now having discharged what we believe to be our duty, we shall with not less cordiality than hitherto do all in our power to advance the true interests of the Society, and we trust that the policy to be pursued may be such as will enable us to give it our best support with the object of securing for it a marked success.

We have now to add that the Society will be relieved of one item in the estimated expenditure, inasmuch as the Assistant Secretary's salary will for the present be provided from private sources.]

CROPS THAT PAY.

Raising Tomatoes for planting outside did not prove such a difficult or costly task as I first imagined. A hotbed was made in February, a quantity of manure being carted into a heap, and a rough frame made by nailing boards together with four lights, as rough as the frame for covering them. On the surface of the manure ordinary garden soil was spread, and leaf soil to the depth of 3 inches. When the soil was thoroughly warm the seed was sown on the surface, and covered by scattering a little fine soil over it. The seed soon germinated, and the plants were thinned where they had come up too thickly. The result was sturdy plants, ready for placing out at the end of May. Lifting did not check them much. After being shaded and syringed for a few days they commenced growing rapidly, and set a wonderful crop of fruit from near the base to the top of the boards, as the season was a fine one. The plants were 15 inches apart, all side laterals were removed, the foliage well cut-in once a week, for it is a mistake to allow them to

grow strongly and then remove large quantities of shoots at one time. As the fruit advances in size it should be gradually exposed, and directly it begins colouring cut away all the foliage surrounding them. Some of the lowest fruits on the plants realised 6d. a pound, the remainder 4d., and we obtained the same for all that we ripened in a warm room. Fully developed fruits will ripen, and the colour will be fairly good, but those that are not fully grown are not marketable. The erection of the boards made this portion of ground "pay well," even if we had left the borders vacant.

All who grow Tomatoes outside know that a large weight of fruit never approaches maturity. The outdoor crop is largely dependent upon the season. In some seasons nearly the whole ripens, in others not more than half the crop. Last year they were a great success. Prolific varieties with moderately sized fruits generally perfect the greater portion of their crop. I regarded that which did not ripen as waste, and could see clearly that to realise to the fullest extent the produce that the plants were capable of yielding some means must be devised by which the remainder of the crop could be developed and ripened. I sought advice, with the result that I made half-a-dozen lights 3 feet wide to place over a portion. But the experiment was not a success, for cold nights stopped the growth of the plants and fruit; they finally died with a large quantity of unripened fruit upon them.

Ready for the following autumn a glass house was erected, with a flow and return hot-water pipe in it. It was a rude structure, but will grow Tomatoes as well as the best and most costly one that could be erected. The house is practically all roof. It was constructed after this fashion—posts were placed 12 feet apart, which stood above the ground 18 inches; two 9-inch boards were nailed to these, which formed the sides; the wall plate (if such it can be called), 2 by 3 inches, was nailed to the posts, the ridge or centre piece was 2 by 4 inches, the bars were 10 feet, these were shaped to fit the ridge and wall plate; when one was made to fit it was not a very difficult matter to manage the rest. The centre was fixed into position, and the bars nailed at the base and the top. The bars were grooved so that we could slip the squares up from the base one after the other, and the glazing was a simple process—no putty, no tacks, only one nail at the base to prevent their slipping down. We found it necessary to place supports here and there down the centre, and afterwards screwed light angle irons all the length of the sides, midway up the bars, It was a cheap house certainly, but one that answered our purpose admirably when we made slight alterations in providing ventilation. This was provided by pulling one of the boards off on each side, and hanging them to form shutters. Many a man hampers himself by borrowing money, if he has not enough of his own, to build costly houses for raising market produce. This is a mistake into which many fall after being trained in private gardens. My advice is, use good 21-oz. glass (large squares, say a foot by 18 inches), good boilers, and pipes; the glass will do for another house when the wood is decayed, or if the glass is sold it is worth nearly as much as when it was new. The road to success is to erect houses suitable for the purpose for which they are required, but at the least possible expense, so that the capital invested can be recovered rapidly.

We had the house, but discovered that we could not lift the Tomatoes from the boards to insure any degree of success. Lack of foresight ended in this matter being next to a total failure, for we succeeded in ripening very few more fruits than was the case when we had no house. The next season the plants for the boards were placed in small boxes, 1 foot square and 9 inches deep. As soon as the Lettuces were removed from the foot of the boards the boxes were plunged, well watered, and liberally mulched with old Mushroom bed refuse. If they are well mulched very little labour in watering is entailed. This proved the right principle, and instead of nailing the plants to the boards each was provided with a cane 7 feet long, and fastened to the top of the boards. By this means we could lift the plants indoors before they were starved by cold nights, and succeeded in ripening the whole crop. From these plants we finished cutting the last week in November. After the glut of outside fruit is over the price naturally rises, and we realised for that portion of the crop that would otherwise have been wasted 5d. and 6d. a pound respectively. Persons intending to grow Tomatoes against walls or boards will do well to place the plants, not in boxes, for they decay too quickly, but in 10-inch pots, and plunge them, burying the rim with at least half an inch of soil, and then mulch them. The plants can then be lifted inside, and perfect the whole instead of half the crop. They will root over the sides of the pots, but these roots can be cut away without the slightest injury to the plants, provided they are lifted with the manure remaining on the surface, which will be full of roots. Sow for the main outdoor crop at once. How to have a profitable crop a month later will be recorded subsequently.—MARKETER.

RICHARDIAS.

FEW plants have a more noble effect than these when properly grown, and few plants are more useful, whether for decorating the conservatory or house use; for the latter purpose it is scarcely surpassed by any other plant, because it lasts so long in a fresh state. There is a difference of opinion amongst some growers as to the best way of treating the plants. Some advise and probably succeed in growing them well by planting them out after flowering, while others cling to the system of always keeping them in pots. I have tried both methods, but much prefer to keep them in their pots; they flower earlier, more freely, and I think make much better foliage. I have been complimented on the showy character of my plants, which commenced flowering the week before Christmas, and most of them are now at their best, carrying from five to nine spathes on each plant, with others showing. They are in pots of the size called "eights," and the plants are fully developed in every way.

I will state how they have been treated, for the benefit of those who like to try the plan. When I came here, twelve months ago, they were in flower in the same pots as now. After they had flowered they were shifted from the conservatory to a cool house, remaining there until well on to the middle of May, when they were turned outdoors under a wall close together, with a few leaves between and around the pots, but otherwise exposed to the summer sun. For a time they were occasionally watered thoroughly, afterwards no water was given. At the end of the summer the crowns showed signs of moving; the drainage was examined, and sufficient water was given to prevent the soil becoming dry. When the time came to take them under cover the top soil was removed, fresh being supplied, and made as firm as possible, but no potting was done, simply removing what young side plants there were. As they showed flower the soil was top-dressed with cow manure quite twelve months old, but with about a handful of soot to a gallon of soil, well mixed. I need hardly say that the plant likes moisture, and from that time to the present they have never been allowed to be dry, and watering every day seems to do them good; no liquid manure has been given. I could scarcely have managed them with less trouble, but I could not have plants more satisfactory. The above plan I have practised for years, and we do not pot them but once in two or three.—THOMAS RECORD.

A MIXED CONDIMENT.

WAYS AND MEANS.—Some of the very best and most successful of gardeners I know have succeeded in spite of the most discouraging difficulties. The old saw, "Nothing succeeds like success," is only half true, and my own opinion is that nothing leads more certainly to success than one or two failures. I am not now speaking of the men who sit down and say, "it will never do," or "it is no use trying, we have no convenience for that sort of thing," but of men with a firm lower jaw and something harder than gristle in the small of the back. As I have said, some of our most successful gardeners have succeeded, and are still succeeding, by the exertion of their abilities on adverse circumstances—they turn their curses into blessings, and smilingly make "a desert place to blossom as the Rose." A gardener of the right stamp will make a rubbish heap beautiful, and the great point is that he will do so willingly. After all, those who are employers simply keep gardeners to undertake the troubles, anxieties, and difficulties of their gardens off their own shoulders, and the best of gardeners are those who give their employers least trouble about conveniences or ways and means. When I remember some of the drudgery I went through as a garden boy, and read of the rude appliances by which our predecessors, the Abercrombies and Speechleys and McNeils, grew their splendid productions, I sometimes think modern gardeners too exacting, and that like the "real princess" of the nursery tale, they will complain of the Rose leaves that get folded beneath them.

COLOURED LIGHT IN GARDENING.—In the long run, looking at Dame Nature, "the dear old Nurse," from an all-round point of view, no doubt mixed or white light is best for plant houses and fruit houses generally. But for particular purposes, or at particular seasons, coloured light may eventually be found of advantage. Long ago the American papers were full of accounts of General Pleasanton's vinery and its roof of purple-tinted glass. Now I have come across the following in an American paper:—"Professor Sachs, the great German botanist, has discovered that the ultra violet and invisible rays of the solar spectrum especially promote the development of flowers, the growth of which is exceedingly feeble when the rays are suppressed, although that of the other parts of the plant is very luxuriant." When practical men went to see General Pleasanton's Grapes, they found a large crop—a larger and better one than the General could produce under white

glass, but the quality of the fruit was not what our Merediths, Thomsons, Wildsmiths, Colemans, and Castles can obtain, so the idea fell to the ground. But if the most celebrated of physiologists and histologists—Sachs—is right, there was something in General Pleasanton's idea after all.

Speaking of light, I remember the late Dr. W. Siemens asserted that the electric light had the same effects on vegetation as solar light, and he attempted to prove its efficiency for forcing purposes. Now I hear of the ghastly destruction of Palms, Tree Ferns, and other choice decorative vegetation in the electric-lighted conservatories in Russia and also in Paris. Nature is jealous, and time brings in his "whirligig of revenges" after all.

Moving Forward.—Now that some of us are pushing on the movement in favour of English plant names, as additions useable in co-operation with the Latin names, it is pleasant to find that our German cousins are also agitating in favour of their own tongue instead of Latin as used for prescriptions. "A Berlin contemporary informs its readers that the famous surgeon, Dr. Esmarch, is the leader of an attack upon 'Apothecaries' Latin,' and he is supported in this campaign, on behalf of common sense in medicine, by several of the most eminent physicians and medical professors in Germany. He asks why a foreign tongue should still be employed by physicians in writing their prescriptions when a general expulsion of foreign terms and phrases and the substitution of their German equivalents has become the order of the day. A pharmaceutical lexicon is being prepared for the use of doctors and chemists, so as to assist them in prescribing and making up prescriptions in the tongue understood by the people."

Berry-bearing Pernettyas.—"The Pernettya is a very pretty small-leaved hardy evergreen shrub, with small white Heath-like flowers in early summer, followed by the bright berries, which give the plant a very ornamental appearance during the autumn and winter, and which were often retained till succeeded by the flowers the following season. It is now some thirty years since the first seedlings were raised by Mr. L. T. Davis in the Ogles Grove nursery at Hillsborough, Co. Down, from Pernettya angustifolia, the hardiest and best free-fruiting variety of Pernettya mucronata then in cultivation, which produced several distinct sorts, varying considerably in foliage, habit, and colour of the berries. From the most promising of these another lot of seedlings was grown, and so on from subsequent raisings, till a collection has now been produced of very great merit, for variety, hardiness, and free-fruiting character. The varieties of Pernettya mucronata will succeed in any good light soil, but prefer an open situation, if not exposed too much to cold east or north winds. Their berries are quite harmless, and although not palatable, may be eaten with impunity."

The above is Mr. Davis's own account of these charming little shrubs, and the following is a selection of the best kinds:—P. mucronata alba, profuse white berries, tinged flesh on the sunny side; P. m. atro-coccinea (small-leaved), bright crimson berries; P. m. carnea nana, dwarf, flesh pink; P. m. lilacina macrocarpa, large puce-coloured fruits; P. m. macrocarpa, large crimson berries; P. m. sanguinea, crimson red, approaching scarlet. Mixed seedlings are very pretty.

Colour Effects.—The author of the paragraph quoted below from the "Popular Science Monthly" says "in what way animals are affected by colour is not very well understood," but supposing that man is a red-coated animal, and that he goes into a meadow containing a "gentleman cow," I believe it is etiquette for one of them to retire. This one animal does in deference to the other. It is the man who retires. Flying is not difficult sometimes! "There are some other curious things in regard to the way in which the human mind is affected by colours as well as the human sight. We are all familiar with what is termed colour-blindness and the unexpected results that sometimes attend it; but colour-sound is something which has received much less investigation. How much or in what way animals are affected by colours is not very well understood; but the subject has been investigated enough to know that they are influenced by them, and the future will probably bring out some surprising results to the one who shall thoroughly cultivate this comparatively unexplored field of research." It is a well known and most remarkable fact that some blind persons have the nerve centres at their finger tips so exquisitely sensitive that they can actually and infallibly recognise various colours by the sense of touch. Blacklock, a celebrated Scottish poet of his day, possessed this ability in a marked degree, and tradition tells of a noted silk buyer who was the very reverse of colour-blind, although what is usually termed sightless or blind. A visitor the other day was looking at Lælia anceps, and startled me by saying it was of a lovely blue colour! He could see all colours except red, so that to him purple flowers appeared as blue ones.

Flower Fragrance.—Nothing in a garden of beautiful flowers is so subtly delicate, so deliciously satisfying to cultured people, as the fragrance of leaves and blossoms. Fragrance is an open book that everybody reads a little, but it is mainly written in faint hieroglyphics that nobody can understand. Scent and flavour are not reproduceable in words or in pictures. You must in the main go to Nature for them direct, always if you want them of the best. I believe coal tar and rotten cheese and cowdung and other nasty unmentionable things do in the hands of the chemist mimic the flower odours pretty well, just as vanilla is made from Pine tree sawdust, and indigo from I know not what. Science is baffled so far by sweet smells. "It has been shown that the odoriferous molecule of Musk is infinitessimally small. No power has yet been conceived to enable the human eye to see one of the atoms of the Musk, yet the organs of smell have the sensitiveness to detect one. Their smallness cannot even be imagined, and the same grain of Musk undergoes absolutely no diminution in weight. A simple drop of the oil of Thyme ground down with a piece of sugar and a little alcohol will communicate its odour to 25 gallons of water. Haller kept for forty years paper perfumed with 1 grain of ambergris. After this time the odour was as strong as ever. Bordenave has evaluated a molecure of camphor, sensible to the smell, to 2,262,584,000th of a grain. Boyle has observed that one drachm of assafœtida exposed to the open air had lost in six days the eighth part of a grain, from which Keill concludes that in one minute it had lost 1·69-220th of a grain." This is most interesting, and I need scarcely ask why we find musk in rats and in oxen, as well as in our own familiar "Musk plants?" Everybody knows the story of the old woman's test for "a real princess." She was to sleep on the uppermost of fifteen feather beds, and the beldame had placed a Rose petal once folded between the two lowermost beds. "There!" said she, "if she is a real princess of our line she will not sleep a wink, and in the morning will complain of the ruckled up style of our bed-making." We want a delicate sensitiveness of this kind to appreciate perfume, especially such subtleties as the odour of "the Strawberry leaves a-dying," or the bursting of the Lime, Cherry, and Chestnut buds in spring. In a word we must have a smeller-garten and cultivate our noses. As it is the manufacturing chemist can make us swallow anything he likes under old familiar names. Beetroot spirit is gin, rum, sherry, whiskey, or brandy, just as he likes, and all done by a few added drops of colouring, scent, and flavouring from a bottle. Artificial eggs and Nutmegs, and Singapore Pine Apple made from Turnips from Sweden, are mere trifles to him.

Bedding Out.—I believe it is now considered heresy and schism to breathe the once sacred name of bedding out, but that good old custom as rightly used is not quite banished as yet from our gardens, nor will it be for all time to come. Bedding out is "not for an age but for all time." We need not go to Heckfield Place to see Mr. Wildsmith's beautiful flower beds; the best place to see bedding out is in the now many good gardens in which hardy plants, herbaceous and alpine, are the vogue. You must tread softly in such places, and there is a particular language or shibboleth, only current in the parterres of the good people to whom it has become a fetich, of the most satisfactory kind. It is a change of names rather than a change of systems, and what in Lobelia and seaside Cineraria once was "a bed" is now called "an arrangement" by the votaries of hardy flowers. But it is a perfectly harmless folly; it is like playing at soldiers or at whist with a dummy—very amusing and instructive as far as it goes. Formerly in the spring days we used to have orderly beds of Crocus, Squills and Iris, or dwarf Daffodils, easily cultivated and easily protected; but now these bulbs are grouped, massed, or arranged on the grass, the arrangement in nine cases out of ten being a vexation to all concerned. The bulb dealers do not object to it for planting bulbs by the cartload on the grass and in groups under trees, and under fresh carpets is very good for trade. To quote the poet, they—

* * * "——— die
As your Loars do, and dry
Away
Like to the summer's rain,
Or, as the pearls of morning's dew,
Ne'er to be found again. ———"

How to Raise Fine Flowers.—There are two ready ways of doing this—good cultivation and judicious cross-fertilisation, or cross-breeding as it is sometimes called Good cultivation in the open air—*i.e.*, for hardy flowers, consists in deep digging and ample supplies of well-rotted manure or of fresh cowdung to the soil. On some soils lime is an advantage, and on all soils soot is one of the most stimulating of manures if dug into the soil so as to become thoroughly incorporated.

Indoors and in pots good fibrous loam, leaf mould, and dried cow manure forms a compost in which nearly all quick-growing or softwooded plants do well. It should be made very firm around the roots at the last potting, and the best way of applying manure

to pot plants is in the shape of manure water—*i.e.*, manure in a liquid state. Standen's or Clay's Fertiliser are very strengthening to Pelargoniums, Fuchsias, Chrysanthemums, and other quick-growing things, but Gloxinias, Begonias, and all bulbous plants are ruined by it, and these should only receive good water in which cow manure has been dissolved. Liquid manure is best made by putting the manure and soot into a canvas bag, and then sinking it to the bottom of a tub or tank, so that a clear filtered and not too strong an infusion is obtained. Weak and often—*i.e.*, every alternate watering—is the best way of applying liquid manure, and this only when the soil is full of roots.

Improving Fine Flowers.—When an amateur has acquired the knack of growing his favourite flowers to perfection, he may add to his pleasure by still further improving and varying them by cross-fertilisation. Most flowers have a green-headed pin in the centre communicating with the seed vessel, and this is the style, the green tip being the stigma, to which the pollen of other flowers may be applied with a wet camel-hair pencil or brush. The pollen, or fertilising dust, is contained in the anthers or yellow-headed filaments which stand around the central point of the flower. To cross-fertilise flowers successfully one may grow the seed-bearing plants at home, and get the pollen from flowers grown by flower-loving friends elsewhere, or it may be obtained from one's own flowers, but never from the seed-bearing plant. Pollen should be obtained from the best habited varieties, and seed should be saved from the varieties that are large and richly coloured, and in both cases from well-grown plants. In this way, by careful and constant cross-fertilisation and good culture, every amateur may soon possess valuable races or strains of the flowers he likes best. The point is to decide on improving what you can already grow to perfection, Primroses, Auriculas, Narcissus, or what not, and then begin to cross-breed only the finest varieties.

Coal Tar and Cement.—Let us begin with the tar. I often wonder this is not more generally used by gardeners and amateurs and cottagers who have either wood or ironwork around them deserving of preservation from rot or rusty decay. It is as cheap as dirt, cheaper in the end than dirt and neglect prove to be. Wherever wooden labels or stakes, posts, &c., are used, the part intended to go into the earth should be first charred, then dipped in coal tar, then dusted over with finely sifted coal ashes, and they will last three times as long as those not so treated. But this is not all, for it has been stated in the paper above cited—"The coating of brick and wooden structures with coal tar, as a rough and ready means of preserving them from the action of damp, has been common from the earliest days of gas industry. It has also been usual in chemical works to protect the stones used in the construction of acid tanks, &c., by a preliminary soaking in heated tar. But the great improvement in strength and impermeability to moisture which results from the simple operation of boiling bricks and stones in gas tar is certainly not so generally known as it should be. Professor Lunge, in the new edition of his work, 'Coal Tar and Ammonia,' draws attention to the subject, and indicates several useful applications. He points out that drain and roofing tiles, which are quite porous and brittle as they leave the kiln, may be rendered absolutely watertight and much stronger by immersion in a bath of hot tar. Building stones are greatly improved by similar treatment; and for many purposes the dead black colour which results is an advantage rather than an objection. The tar should be deprived of water and its most volatile oils; and to produce good results the bath must be maintained at a temperature of at least 100° C. The articles to be treated should be thoroughly dried and allowed to remain in the tar for some time."

Cement.—Useful as is coal tar, cement is almost of more importance to all good gardeners. You can do anything with cement if you will only try. Even rotten parts of the woodwork of hothouses filled and drawn with cement last almost as long as new repairs by a carpenter. Common wooden stages can be lined with cement, and so made watertight and damp-proof. Edgings, piers or supports, steps, concrete slabs, and all sorts of rockwork can be most effectively produced in cement. Bare walls covered with common gas coke stuck on and coloured with cement form pretty ferneries. Concrete piers or supports are readily made with clean mashed gravel or stones, or coke and cement. You can model anything in this plastic material, and the only tools are thin firm moulding boards, a trowel, and a big paint brush to soften off and smooth surfaces or to form water worn boulders, &c., *ad infinitum*. A handy man in a garden can do wonders with these cheap and simple materials.—Doctor's Boy.

NOTES ON PEACH TREES.

Nothing is more disheartening than to have a fine promise of blossom, and then as soon as the trees are started to see the buds fall in showers. Early-forced Peach trees are notorious for such behaviour, some varieties more than others, and although much has been written detailing the real or fancied causes, it is unfortunately far from uncommon, hence any information likely to throw any light on the subject must be of service to many readers of the Journal. We are frequently told to keep our Peach borders moist through the winter, or when the trees are at rest. It is very good advice, but not always sufficient to prevent the buds falling, as I have many times proved; indeed I can go further, and say that, provided the wood be thoroughly ripe, a Peach border may become very dry and not a bud be lost.

Not long ago I had to take charge of some Peach trees which, partly from their position and partly from neglect, had become so dry that it was impossible to moisten the soil more than an inch below the surface. One reason for this was, they were planted on a level with the front sash of a lean-to house, so that what little water had been given quickly ran off to the level of the floor, which was 2 feet 6 inches below them. There had been no fruit for some years past; the buds fell every spring. The trees made very little wood, but that, which was small and wiry, was every autumn well set with fruit buds, notwithstanding that red spider had devoured the foliage by the middle of September. We tied the trees to the roof, undermined them, and wheeled the soil to the garden, which after a winter's rain, was found as dry as dust 3 inches below the surface. After putting the drainage right the trees were lowered to the level of the floor, the space was filled with fresh loam, well watered, and the surface mulched with littery manure. Not a bud fell the following spring, and we secured a good crop of fruit.

I have mentioned this, not to recommend border drought, but to show that Peach borders may become very dry without the trees losing their buds, and that dryness at the roots is not always the cause of buds falling. There is no doubt, however, that if means had not been taken to supply moisture before the trees started the buds would have fallen in showers, as they had done in previous years; hence the lesson is, always thoroughly soak the borders before starting Peach trees.

Immaturity of the wood is generally the cause of buds falling, so that any information likely to help us to secure thoroughly ripened shoots is valuable. According to my experience the very worst form of house for early forcing is a span-roof with fixed sashes, and the best is a lean-to with a south aspect and portable lights. I have always found Peach wood ripen best when the lights can be taken off after the fruit has been gathered, and especially so with early forced trees. As long as there are leaves the trees must be kept syringed in houses with fixed lights, in order to keep red spider in check, and that of necessity creates a condition in the house more favourable to the growth than to the ripening of Peach shoots. If some experienced correspondents would discuss this subject further they would be doing valuable work.—J. H W.

ASPARAGUS CULTURE.

Mr. G. Abbey, in his very excellent articles on Asparagus in last year's Journal, August to October, advises sowing or planting on ridges 3 feet apart; and in the commencement of his paper in the Journal for September 1st, page 191, last volume, he says, "Let the height of the ridges be as before stated," but I find he has omitted giving the height of the ridges. As I am thinking of sowing a good piece this spring I should esteem it a favour if Mr. Abbey will rectify the omission in your next issue.—K. J. A.

I am obliged to "K. J. A." for directing attention to my having omitted to state the height of the ridges at the respective distance apart of the rows and plants. In the Journal of Sept. 1st, 1887, page 191, it is stated, "For the 18-inch rows plant on the flat," which precedes the quotation of your correspondent—viz., "For the other distances let the height of the ridges be as before stated." Now planting on the flat in the manner stated is the key to the ridge. There is clearly no ridge made before planting, but one is made by doing this in the way indicated—viz., "Stretch a line at the required distance" (*i.e.*, 18 inches in planting on the flat), "or along the centre of each ridge, and make a sloping cut on both sides the lines at an angle of about 45° where the plants are required," &c. "The plants are placed astride the ridge, &c., to insure having all the crowns level with the surface." So far, therefore, there is no ridge, but the covering with an inch of fine soil, and over the crowns with a still further 2 inches raises a ridge of about 3 inches. For sowing where the plants are to remain the ridges should be 3 inches high for rows 18 inches apart; 6 inches high for rows 3 feet apart; 8 inches high for rows 4 feet apart; and 9 inches high for rows 4½ feet apart. In planting, the height of the ridges would be, for rows 18 inches apart flat, the planting forming the ridge about 3 inches high; for 3 feet rows, 3 inches; for 4 feet rows, 5 inches; and 4 feet 6 inch rows, 6 inches. Covering with soil at planting will raise the rows directly over the plants 3 inches, and taking out the soil from the space between the rows for covering the roots and crowns will correspondingly increase the height of the ridges, it being further increased by the operation being performed from the spaces between the rows—*i.e.*, the

ground is sunk by treading in the spaces, whilst where the plants or rows are it is not; therefore the ridges are more pronounced in practice than they would appear to be from the heights given.

I would take the opportunity afforded of stating that another season has proved the advantage of growing Asparagus on the ridge-and-increased-distance system. It is the only way to grow heads of the size and quality enabling the grower to compete successfully with imported produce. Its cultivation on the lines indicated, with the utilisation of material within the reach of all, would result in as fine Asparagus being grown in England, particularly in the sandy semi-alluvial soils of Beds and Hunts, or the light fen soil of Lincolnshire, as in any part of the world, size, nutritive quality, and freshness being the tests of merit.—G. ABBEY.

Notes & Gleanings

EVENTS OF THE WEEK.—To-day (Thursday) the Royal Society meets at 4.30, and the Linnean Society at 8 P.M. On Monday, March 5th, the General Committee of the National Chrysanthemum Society will hold a meeting at Anderton's Hotel, Fleet Street; and on Wednesday, March 7th, the Society of Arts has a meeting.

—— PROFESSOR I. BAILLIE BALFOUR OF OXFORD has been elected to the Chair of Botany in the University of Edinburgh, vacant by the death of Dr. A. Dickson. Mr. Balfour is a son of Dr. J. Hutton Balfour, who filled the same chair for so many years prior to Mr. Dickson.

—— IN the South of England the weather has been extremely cold and dull with keen north-easterly winds, and last week snow fell on several days, accumulating in some districts to a considerable depth. On Friday last week in several gardens around the metropolis a temperature of 16° was recorded.

—— THE WEATHER.—"B. D.," writing from Scotland, says—"The week ending the 27th inst. has been the coldest of the season. There has been no intense frost, from 1° to 4° nightly, and last night the thermometer stood at 33°; but a piercing N.E. wind has prevailed, and snow showers has been occurring over the country. In some places roads are still blocked, and in the south-eastern counties drifts of 6 feet are reported. The low grounds in South Perthshire are all but clear, and there is but little on the lower hills around."

—— THE WEATHER IN FRANCE.—Mr. Peter Barr writes to us from Bayonne, in the south of France:—"I am here in the midst of a winter that would be no disgrace to Scotland, and such, as I understand, has not been experienced at this time for fifty years."

—— BRUSSELS INTERNATIONAL EXHIBITION, 1888.—On February 22nd a meeting of British exhibitors was held at the Mansion House, London, the Right Hon. Polydore de Keyser, Lord Mayor, presiding. A letter was read from M. le Comte d'Oultremont, Commissaire General of the Belgian Government, recommending that an official Commissioner should be appointed to facilitate the transactions between English Exhibitors and the Belgian Commissioner. After a short discussion it was resolved that Mr. S. Lee Bapty should be officially appointed as representative of the exhibitors in the British Empire section. It was stated that the Exhibition is expected to be a very comprehensive and successful one.

—— PARIS EXHIBITION, 1889.—On the same day a meeting was held in the rooms of the British Chamber of Commerce, Eastcheap, to consider what steps should be taken with regard to British exhibits at Paris next year. After considerable discussion, in the course of which several expressed themselves as opposed to taking part in the Exhibition, a motion was carried to the effect that "the meeting considered it desirable the British Empire should be adequately represented at the Paris Exhibition of 1889."

—— THE GARDENERS' ORPHAN FUND.—The ordinary monthly meeting of the General Committee of this Fund was held on Friday night last. Present: Mr. G. Deal (Chairman), and Messrs. Barron Wynne, Woodbridge, Nicholson, Wright, Laing, Roupell, Dean, Richards, Goldring, Head, Bates; also Mr. G. W. Cummins, a provincial Secretary. The eminent Belgian horticulturist, Mr. Pynaert, attended the meeting, and was cordially welcomed by the Chairman. Since the last meeting amounts of £46 11s. 6d. in donations and £18 16s. in annual subscriptions were added to the Fund, including £5 from the Horticultural Club. The total sum promised to the date of the meeting is 1449 14s. 4d., of which £1168 2s. 6d. has been received. The Secretary (Mr. A. F. Barron, Chiswick) will be glad to receive contributions with the view of preparing for the first election of orphans, some of which are nominated. On the advice of the sub-Committee appointed to consider the matter it was decided to have a popular dinner in connection with the first election on July 13th, and it is hoped a large number of provincial secretaries and their friends will be able to attend on the occasion. Their co-operation is much valued, and their presence will be highly appreciated. Mr. J. Lyne was unanimously appointed Secretary for the Wimbledon district. Gardeners who are willing to help in districts where local secretaries are not appointed are invited to communicate with Mr. Barron. The subject of money boxes for placing in suitable positions was considered, but more samples were thought necessary before arriving at a decision. The question of collecting cards will also receive careful attention. The sub-Committee was re-appointed to formulate arrangements for the annual meeting. At the close of the proceedings Mr. Pynaert expressed the pleasure he had derived in being present at the deliberations, and trusted that an object so good, which had no parallel in Belgium, would be well supported in Great Britain.

—— A CORRESPONDENT sends us some CINERARIA BLOOMS to "let us see that he does not lag behind other bumptious growers." We may suggest that the word "bumptious" appears to be somewhat misapplied if it refers to persons who have sent us much better Cineraria blooms than those before us, the florets of which in all the large examples do not overlap. A laced Primula accompanying them is very attractive.

—— REFERRING to the reductions in the schedule of the LIVERPOOL HORTICULTURAL ASSOCIATION "A Committeeman" writes:—"Respecting my report of the annual meeting, I must remind Mr. Bardney (see page 149) that it was not written in a 'hurry,' as he suggests, to which the date of its publication will testify, but was the outcome of a few notes taken at the meeting. I distinctly heard a member inquire of Mr. Bardney the amount he would deduct from the summer schedule, to which he replied £105. This is how the mistake originated, as I now learn this is the total amount proposed to be deducted from the three schedules. The resolution handed to the Chairman reads thus:—'That the prize money offered by the Committee for the three Shows to be held this year (1888) be reduced by £105—namely, £17 on the spring Show, £50 from the schedule of the summer Show, and £35 from the autumn Show.' A total by the way of £102 only." [We doubt if further communications on this subject would be of general public interest.]

GARDENERS' EDUCATION.

I HAVE been thinking over what "Experientia docet" had to say in a recent number on the educational deficiencies of gardeners. Whilst there can be no gainsaying the facts which he places before the readers of the Journal—my own experience coinciding with his—I do not think gardeners are as a class so bad as we may find in many other trades. I receive many well written communications from gardeners, and those instances which are of a nature which would fail to satisfy the inspector of an elementary school are almost entirely lapses and mistakes in little things, which I suppose every imperfectly educated man is at times liable to fall into. They are as nothing when compared with notes I occasionally receive from other head servants, and whose relations to their masters and mistresses are closer than those of gardeners. Accounts and estimates from local tradesmen are also composed in a style far inferior to what I should expect from a gardener. Only last summer I received an estimate so bungled that I was ashamed to present it at headquarters, and had to point out to the person estimating the necessity of expressing himself at least with clearness. These facts do not, of course, make the case of gardeners a whit better, and if it will in any way conduce to the improvement of the rising men who have not yet taken so much pains to improve their English as they might do, I shall be very glad to place the following remarks at their service.

By way of introduction, it may be noted that board school education is, of itself, insufficient. These schools turn out good penmen, but that is the only part of their code of instruction to which the expression "good" will apply. It therefore becomes incumbent on men whose education has been derived from that source to see to it that the other necessary elements of a fair education are made good. Your correspondent is hard on men who will not take the trouble to learn to spell the name of a plant correctly, and who fail to pick up knowledge that is lying directly under their eyes. But it is just this question of seeing

things that makes all the difference between the man who is continually adding to his stock of knowledge and to his attainments, and his neighbour who with the same advantages never gets a step further forward. Speaking from personal experience, I can safely say that I taught myself more after I began work than ever I was taught at school. But even personal teaching is not sufficient. Thanks to the strict editorial supervision which obtains in the conducting of the Journal, I found that it was possible to make mistakes. I was not too proud to ask the help of a better educated man than myself, who kindly taught me more in the course of a few lessons than I had taught myself in many years. The plan was a very simple one. An essay was written out, and we went over it together, the result being that I found it possible to express my thoughts more briefly, more clearly, in more simple language, and, above all, without these slight mistakes arising from the wrong use of little words which is so prevalent. A very great help to writing correctly is found in a correct mode of expression in speaking. I occasionally have letters from persons in a high social position, which, correct enough in spelling, are badly written and of the poorest composition. The only reason I know for the latter fault is to be found in the bad English spoken by the upper classes.

There is, however, a point to which "Experientia docet" did not allude to, and which is of as much importance as spelling—I refer to the pronunciation of plant names. If the name of a plant is badly spelled it will have at least a phonetic approach to what it ought to be, but in the case of pronouncing it, it is sometimes impossible to conclude as to what is meant. This applies in a degree to specific and generic names, but more particularly to the names of varieties; and here, again, not so much to English cognomens as to those of imported introductions. When it is considered that the majority of Roses, Gladiolus, Chrysanthemums, double Zonal and double Ivy Leaf Pelargoniums, double Begonias, besides the names of many other flowers in smaller proportion, are French, and pronounced by the employers of gardeners as the French do, how ridiculous must the attempts of gardeners be to name these to their employers! French itself is worth while acquiring so far as to be able to read it, for every year brings gardeners into a closer relation with French growers, and it is of much advantage to be able to consult their catalogues, and to obtain some knowledge of their garden literature; but a knowledge of the language does not enable us to speak it, and the only wise method is to simply ask those who can speak it to tell us the names. That is an incomparably better way than to stumble on as so many do.

What I would therefore advise young men to do while their minds are still in a receptive condition, and while they have leisure, is to make a free use of the pen, take notes of work done, names of plants, and descriptions of the same, write essays, and ask the opinion of a well-educated man—not a schoolmaster—as to faults. Teach yourself to draw by compass and freehand, learn Latin, and above all French, and in doing these and in carrying out other pursuits which you will be sure to engage in, you will have taught yourselves to employ your eyes to some effect with honour to yourselves and credit to your calling.

I have no hope for the older men to whom "Experientia docet" directs his remarks. They are unaware of their failings, and therefore incapable of applying his strictures to their own cases.—A NORTH BRITON.

EARLY FLOWERS.

MR. W. B. HARTLAND of Cork sends me N. poeticus præcox, the most timely purple-ringed Daffodil of the "old masters"—viz., Lobel, Dodoens, Gerard, and Parkinson. It is Italian, and flowers very early in a cool sunny greenhouse; and along with it came N. poeticus angustifolius, of the "Bot. Mag.," which I take to be "the timely purple ring" of the aforesaid old writers.

The big Irish yellow Daffodil, called "Ard Righ," or "Yellow King," is now fine in pots indoors, along with N. variiformis (pale sulphur), N. pallidus præcox (pale sulphur), N. princeps (pale lemon perianth, chrome trumpet), N. moschatus (true), from the Val d'Arras, and the whitest and smallest of all the "Swan's Neck," or "Bent Head" Daffodils. N. (Corbularia) monophyllus, the white African "Hooped Petticoat," or "Crinoline Daffodil" is now fine in pots in cold frame along with N. Cyclamineus, N. minimus, N. "Saragossa maximus," a very dwarf and floriferous Daffodil imported from Italy (Saragossa) by Mr. Ware. N. minutiflorus, the smallest of all the Narcissi, is blooming here as the gift of Mr. A. W. Tait of Oporto, an ardent and successful collector of Spanish and Portuguese species of Narcissi. This bonnie little gem is much smaller than N. juncifolius, with which, as a sub-species, Mr. Baker quite rightly unites it in his latest arrangement of these flowers. Outside on the open borders odd blooms of N. cyclamineus, N. minor, N. minimus, N. pallidus præcox, and N. minor, are in bloom. N. nanus is in bud, but much later than usual this season, as also is the giant N. maximus. The earliest double Daffodil now showing coloured buds is N. "Silver and Gold," the N. albus aureus of Messrs. Baarnaart & Son. It is similar to N. Telamonius plenus, but has white perianth segments interspersed among the deep yellow segments, into which the trumpet part of the flower is divided. Mr. Barr suggested to me long ago that this is "Gerard's Double," or the true double English form of N. pseudo-Narcissus enlarged and developed by cultivation. In other words it is simply the cultivated "phase" of the little double yellow N. pseudo-Narcissus of Devonshire and the Isle of Wight. I have grown the latter for years, and as they are now large and bi-coloured I believe Mr. Barr is right.

Snowdrops have been very fine. Galanthus Imperati. G. nivalis, G. nivalis minor, G. nivalis fl. pl., G. n. bracteatus, G. Elwesi. G. E. major, G. Melvillei, G. M. serotinus, G. plicatus, G. plicatus major, G. plicatus elegans, are all now in bloom. Our earliest Snowdrop this year flowered early in October. It is supposed to be different to the type of G. octobriensis, and came direct from Mount Hymettus in Greece, along with the fine Greek Anemone fulgens, the true dark blue A. blanda, and a form of Scilla bifolia, which blooms six weeks earlier than the type—viz., in December and January.

A pale turquoise blue Grape Hyacinth is now in full flower here. Can anyone suggest a name for it? It is by far the earliest form of Muscari, and was sent from South Europe a year or two ago by some kind friend I know not. The fine large twin-blossomed Leucojum vernum and carpathicum is now in flower, and is the best of all the forms of L. vernum. It has a very large Narcissus-like bulb, while the bulb of the typical L. vernum is Snowdrop-like, and the smaller solitary flowers are green, not yellow, dotted at their apices. Both forms are figured in the great "Hortus Eystettensis (A.D. 1613) so that they have long been known in gardens. Blue Squills (Scilla siberica and S. bifolia) are just peeping, and the "Lenten Roses," as the various forms of Helleborus orientalis, H. olympicus, H. atro-rubens, H. purpurascens, H. colchicus, and H. guttatus, together with the spotted Berlin seedlings, are



Fig. 23.- Narcissus obvallaris.

at their best. I never saw bulbs, hardy plants, and fruit trees so sturdily vigorous, well-budded, and promising.—F. W. BURBIDGE.

[The illustration (fig. 23) represents a flower of the favourite early Daffodil, Narcissus obvallaris, which was excellently shown by Mr. T. S. Ware, Tottenham, at South Kensington early in February. It is one of the N. pseudo-Narcissus major type, but is of medium size with well-formed bright gold corona and lighter perianth divisions.]

ARTIFICIAL MANURES FOR PLANTS.

THAT artificial manures are of the utmost utility to plant growers there is no disputing; but in regard to their various qualities, composition, and action there is a wide field for discussion. Your correspondent Mr. H. Dunkin (on page 128), while admitting the convenience of such plant food, seems to be somewhat puzzled as to their erratic behaviour when he says, "Where one kind of manure is continued for some weeks the plants do not respond to its stimulating influence so readily as when it was first given; when such is the case give a few waterings with clear water, and then apply some other kind of manure." Your correspondent unfortunately leaves us in the dark as to the loss of appetite on the part of the plant, unless he presumes that members of the vegetable kingdom are similar to those of the animal kingdom, inasmuch as a sameness of food causes distaste, but such I hold is not altogether the case. Where such occurrences are observed I should be inclined to doubt the quality of the manure. I do not profess a deep knowledge of chemistry, but as far as my observations go I am led to believe many of the artificial, manufactured, or patent manures—whichever we like to call them—are overcharged with ammonia-yielding substances, which is not a manure in the strict sense of the word—merely a stimulant that, unless backed up by something more substantial, is apt to leave the plant in a very debilitated state after its influence is expended.

What may be the object of mixing Peruvian guano with Clay's Fertiliser? Is it simply on account of economy, or to add to the efficacy

of the latter? As a user of Clay's Fertiliser for many years I do not consider it requires any improving. Nitrate of soda I am not much inclined to use for pot plants, but for kitchen garden crops, especially on light sandy soils, it may be used with considerable advantage; but, there again, I would not advocate its use alone, either sprinkling it on farmyard manure, or if that is not possible, using a good proportion of some cheap form of potash, kainit preferably. Some market growers have such a prejudice against nitrate of soda that I know for a fact, if anyone was to offer to make them a present of a quantity, and apply it free, they would not have it; as they have experienced the exhausting influence it has when used alone on the soil, and also the peculiar action it has on heavy land, producing an effect similar to salt in rendering it close and of a soapy texture. But if I was unable to get a good supply of farmyard manure I should not object to using a little nitrate of soda, but should take the all-important precaution of mixing some kainit with it, and, if possible, adding some bonemeal, or if the soil was of a sandy nature I should give this mixture the preference to farmyard manure for some crops. The kainit furnishing the potash would, in conjunction with the ammonia yielding nitrate of soda, produce as near a simple plant food as it is possible to make cheaply for general purposes.

In the same way in regard to plants in pots, if the manure applied in the first instance is a properly proportioned combination of the elements needed for the plant's support, no diminution of the plant's vigour will ensue even after a protracted application; but, on the other hand, if the so-called manure fails to have effect after a few applications, change of food would certainly be a step to remedy the evil, but what I should call a haphazard one—the next sort of manure applied may possibly contain the element the previous one was deficient of. I sometimes think there is an analogy between plant and animal life—between the way we should treat a plant and the way we should treat ourselves. For instance, feed a plant on strong ammoniacal manures, and the result will be gross unfruitful growth. Treat the animal to a course of sugar, Potatoes, and other starch-yielding materials: result, fat and loose tissue will increase while bone and muscle will decrease. But give to the plant according to its individual needs, ammonia, potash, lime, &c., in proper proportion, and, other things being equal, good permanent results will follow.—M. Coombe, *Ashton Court, Bristol.*

EUCHARIS CULTURE.

Circumstances which I could not avoid prevented my replying earlier to Mr. Pettigrew's strictures on my note concerning the culture of Eucharis amazonica. The course of treatment which I recommend has produced results of a most satisfactory nature, or I would not have sent it to the Editors for publication. Mr. Pettigrew seems to think there need be no difference in the treatment of plants in good health and those in a sickly condition—a surprising assumption from such an experienced gardener, for it is well known that plants in robust health will endure treatment which would soon kill their weakly associates. Whatever my critic may affirm to the contrary the sight of sickly Eucharises is far more common than desirable in many gardens, and it was with the hope that it might assist those in charge of such that I penned my note. If Mr. Pettigrew will look over my note again he will see that I do not recommend the plants to be dust dry at any time after they are once subjected to my treatment, but only to prepare them for it. I will add nothing to what I have previously written with regard to watering. Mr. Haggart's practical article in last week's Journal has referred to that subject in a manner which must be sufficiently convincing to all.

I may have something to say about the "mite" question in a future issue, and will only suggest that had Mr. Pettigrew adopted the treatment which I recommended with his affected plants, instead of consigning them to the fire, he might by this time have had a useful stock.—M. D.

In complying with Mr. Haggart's request respecting the temperature in which the Eucharises are grown here, perhaps it will be necessary to give the dimensions of the house, and the general arrangement and appliances for heat and ventilation. The house is span-roofed, with a door in the centre of each end, and a walk round the sides. It is 60 feet long, 21 feet wide, and 16 feet high, with a slate table in the centre 50 feet long and 9 feet wide, supported on iron framework 2 feet 6 inches above the level of the floor. There are also slate shelves 2 feet wide round the sides of the house on the same level, and supported by iron framework similar to the table. The house is heated by means of six rows of 4-inch hot-water pipes on each side, placed under the side shelves, and the tables and shelves are covered to the depth of 4 inches with sand and pea-gravel to maintain moisture. The house is ventilated both top and sides by means of simultaneous opening ventilating gear.

The pots of Eucharis in question are placed on the top of large inverted flower pots in the centre of the table, 18 inches above the surface to keep the outside leaves from lying on it, which they would if the pots were placed on the table. The house is in good repair, and there is no difficulty whatever in keeping the temperature at 70° in ordinary weather without making the pipes very hot, but in winter when the weather is severe the temperature is allowed to drop to 60°, and to rise to 80° and 90° in hot weather during the summer with plenty of air on. The plants, as I have stated in the Journal before, receive the same treatment as regards heat and moisture all the year round. They are never subjected to a lower temperature than 70° (except in severe weather), nor dried off and rested, with the idea that this treatment will ripen the bulbs. The temperature recommended by "M.D." in his easy method of restoring languishing plants to vigorous health was (if I mistake not) ordinary stove heat. Now if anyone was to ask me what was meant by ordinary "stove heat," I certainly would say a minimum of 70°. Mr. Haggart informs us that the Eucharis can be restored to vigorous health in a much lower temperature than this. The sickly bulbs he took charge of some eight years since, "with scarcely any leaves, and these were only a few inches long, spotted, wrinkled, broken, and unhealthy," were restored to health in a temperature which often stood at 50°, and in very hard weather as low as 45°. I presume (indeed he says so) it is because he has not sufficient heat power to keep it higher, or he probably would not allow the temperature "very often" to fall so low.

Mr. Haggart's general treatment of the Eucharis consists in giving the plants no water for a long time after potting—not until they are well started—and simply enough then to moisten the soil, and in keeping the atmosphere as moist as possible by syringing the stage and the pots, but singularly he never syringes the plants. The plants are potted as they require it, and receive more water, and occasionally supplies of liquid manure to encourage them to make growth. The supply of water is gradually discontinued when they seem to stop growing until they are well ripened.

Under the above treatment (which he terms "the dry system" that Mr. Pettigrew condemns) the bulbs, with the few short, spotted, wrinkled, broken, unhealthy leaves, have filled large pots with plenty of leaves, which now flower regularly three and four times a year, a dozen pots producing no less than 600 blooms in a month. Mr. Haggart is to be congratulated on his successful treatment of the plants in question, but it is a wonder to me how the bulbs can flower so regularly three and four times a year, when they are often standing in such low temperatures as those described. I am not surprised at the number of flowers that twelve large pots of healthy Eucharises will produce, but it is the cold treatment and the regularity with which they flower three and four times a year that surprises me.

I have gathered as many as 600 blooms in a week from six of the largest plants here, but they are treated on a much more liberal system, receiving plenty of heat and moisture at all seasons.—A. Pettigrew, *Cardiff.*



ROSE SHOWS IN 1888.

June 30th.—Eltham and Reigate.
July 3rd.—Bagshot, Canterbury, Diss, and Hereford.
" 4th.—Croydon.
" 5th.—Bath, Farningham, Hitchin, and Norwich.
" 6th.—Sutton.
" 7th.—Crystal Palace (National Rose Society).
" 10th.—Ipswich.
" 11th.—Tunbridge Wells.
" 12th.—Winchester.
" 17th.—Leek and Ulverstone.
" 18th.—Birkenhead.
" 19th.—Helensburgh.
" 20th.—Darlington (National Rose Society).

The above list contains all the Rose Show fixtures that have as yet reached me. In future lists I shall be pleased to insert the dates of any other Rose Shows that I may receive, also those of any Horticultural Exhibitions where Roses are made a special feature of the Show.—Edward Mawley, *Rosebank, Berkhamsted, Herts.*

THE WHITE BANKSIAN ROSE.

How seldom we find this beautiful and thornless Rose favoured with a position under glass. The only reason I can advance for this is that I think its good qualities are not sufficiently well known. Its small and deliciously scented flowers are produced in clusters varying in number from three to nine or ten, and most useful little bunches they are for so many purposes, such as arranging with other flowers in vases, bouquets, or buttonholes. The plants are also of easy culture, and being of vigorous growth quickly cover a large space, are seldom troubled with insects of any kind, and if treated rightly will flower as certainly and as freely as the Rose that is sometimes spoken of as the only one without a thorn—viz., the Primrose. At Preston Hall in Kent, a fine old plant covers the roof of a corridor that forms a connection between the fruit houses. It is said that this tree has been planted twenty years, and judging from the thickness of the stem it seems quite probable, and from its trailing branches I have cut many a basketful of flowers. It is planted in a narrow border, but I have no doubt its roots must have found their way some distance from the original border. I have seen trees growing in pots, but they do not appear to be so happy under such conditions, probably owing to the roots being too much restricted. Banksian Roses will not bear hard forcing, but are admirably adapted for planting in cool Peach houses when the room can be spared, or in any structure

kept at a greenhouse temperature. During the growing season they should be freely syringed till the flowers begin to open, which in a cool house they will generally do about the beginning of March. When the flowering period is over the greater part of the wood that flowered should be cut clean away, together with any strong shoots not wanted for extension, and the medium sized growing shoots left to ramble freely during the summer months. In August these should be examined again, and thinned wherever they appear too much crowded, so as to leave room for light and air to circulate amongst them and thoroughly ripen the wood. The points of the shoots will not require shortening, except in a few cases where there is no room for extension. The shoots should then be lightly fastened to the trellis or wall here and there, just to keep them within bounds, but must never be tied in closely, as it is altogether against their rambling nature. During the autumn months they should have abundance of air, and if properly attended to at the roots and brought on gradually at the beginning of the year, they will flower from the axil of almost every leaf, and will, I am sure, give general satisfaction to lovers of white and fragrant blossoms.—H. DUNKIN.

THE ROSE GARDEN.

PLANTING Roses should be pushed on to completion as quickly as possible, weather permitting. They thrive best in a stiff loamy soil, therefore where the latter is light it will be necessary to mix some clay and manure with it before planting. Do not bury the stems of the trees deeper than they were before. Press the soil firmly about the roots with the feet, and, if standards, secure them to stiff sticks. Afterwards lay on a few inches thick of short dung as a surface-dressing, which will not only prevent frost penetrating the soil, but it will also maintain the latter in a more equable condition about the roots than would otherwise be the case. Moreover, the good resulting from a mulching of this kind during the summer, especially if it should be a hot one, cannot well be over-estimated. For beds I prefer Roses on their own roots. These may be planted about 4 feet apart every way, and be pegged down about the end of March, the suckers which spring from the base of the plants during the summer being similarly treated in July for autumn flowering. The following forty-eight varieties may be depended on for exhibition and other purposes—viz., Duke of Edinburgh, François Michelon, Marguerite de St. Amand, La France, Marie Baumann, Rosieriste Jacobs, Reynolds Hole, Louis Van Houtte, Marie Van Houtte, Victor Verdier, Merveille de Lyon, Madame Willermoz, John Bright, Édouard Morren, A. K. Williams, Beauty of Waltham, Souvenir d'un Ami, Magna Charta, Baron de Bonstettin, Duke of Wellington, Madame Lacharme, Lord Macaulay, Paul Néron, Madame Emilie Fontaine, Archduchesse Elizabeth d'Autriche, Senateur Vaisse, Comtesse d'Oxford, Auguste Rigotard, Antoine Dueher, Xavier Olibo, Madame Nachury, Madame Gabrielle Luizet, Marquise de Castellane, Niphetos, Charles Lefebvre, Duke of Teck, Etienne Levet, Alba Rosea, Fisher Holmes, Barthelemy Joubert, Ferdinand de Lesseps, Madame Eugénie Verdier, La Rosière, Camille Bernardin, Sultan of Zanzibar, Catherine Mermet, E. Y. Teas, Edouard André, and Madame Thérèse Levet.—H. W. WARD.

ROSE GRACE DARLING.

IN reference to Mr. Machin's inquiry on page 151, Grace Darling was last year classed in the National Rose Society's report as a Tea Rose, because the Society always accepts the raiser's classification until it is found to be incorrect. Now that this exquisite Rose, charming, and in every way desirable as it is, has conclusively shown itself to be a Hybrid Tea, it will, no doubt, have to be exhibited in future as such. The point, however, will be authoritatively settled this season on the publication of the Supplement to the National Rose Society's Catalogue of Selected Roses.—T. W. GIRDLESTONE.

MARECHAL NIEL.

"L. T." (page 151) finds fault with the instructions given by "N." (page 107) and is surprised to find that he advises no air being given. He wishes "N.'s" remarks to be endorsed by some other rosarian. I do not know if he will consider me competent for this or not, but I fully endorse "N.'s" instructions. Sudden bursts of sunshine do far less harm by raising the temperature than the most careful gardener will do if he opens the ventilators. It would be very warm indeed before I would open the ventilators of a house of forced Roses.

To bring forward the case of a plant in Mr. J. C. Reid's gardens, which is not forced, is a very curious proof of "N." being wrong in his advice for forcing Roses. Air being admitted may prevent mildew, but I doubt it. By the way, if Mr. Reid's gardener is not above taking advice, let me suggest that half the flower buds on his Maréchal Niel be removed, or it will probably go after a good many others, and it will be too late then to inquire the reason of its so doing.—D. GILMOUR, JUN.

I, LIKE your correspondent "L. T.," was a little surprised on reading the article by "N." on the subject of ventilation. I have here under my charge a span-roofed house with the ends standing east and west. On the north side is planted two Maréchal Niel Roses on their own roots, and they now cover the whole of that side of the house. The plants are only three years old and have made capital growth. I prune well back after flowering. Some of the growths are 12 feet in length. The night temperature in winter is just what we can get according to the weather, and ventilation is given on all favourable occasions when the thermometer rises to 55°. If that dreaded pest mildew does appear I find no difficulty in keeping it in check by using the mixture so often described in the Journal—viz., softsoap, sulphur, and a little petroleum, which I find not only a remedy, but, better still, a preventive. Common sense must be used in ventilating Rose houses as well as any others where plants are grown under unnatural conditions.—W. W., *East Yorks.*

SEASONABLE HINTS ON FLORISTS' FLOWERS.

AURICULAS.—As we have now, we may hope, passed through the gloomiest portion of our winter and we see things once more beginning to move, I think on the whole it has been a good winter for florists' flowers, save that period of severe fog which prevailed throughout England, and against which it was needful to take precautions, as damping off was very prevalent. I do not think that there was an excess of autumn flowering; indeed, the season was not provocative of that, but in my opinion there is no remedy for it. There are certain varieties which will invariably do it and others never or seldom, the time of potting makes no difference. Auriculas have been also slow to move, and are only just beginning to develope themselves. I have discarded what used to be a troublesome business at this season—viz., top-dressing, and have contented myself simply with stirring the surface of the soil, and, if necessary, filling in a little, but this is hardly needful, as I am sure it is better to have the soil under the level of the pot than high up in it, as in watering you are pretty sure that some will run over. They may be still left in their frames facing south, but especial care will be needful to cover up on frosty nights, as when the blossom is advancing is the worst time for them, not that it kills the flower stem, but makes the flowers themselves crimpled, destroying that flatness which is one of the chief characteristics of a good flower.

CARNATIONS AND PICOTEES.—I have never seen my small collection in better health than this year. Many of my plants last season failed to give me stock, but of those that did the layers were good, not too strong, or what John Ball calls "gouty." There has not been the slightest sign of spot or of the Carnation grub, and I do not think I have had to remove a dozen dead leaves, the plants having that bluish green tint so indicative of good health. The heap of compost for potting them has been for some time under a glass roof, but open at all sides so as to allow it to have the influence of the frost. This must be turned over several times yet before being used, and a careful look out kept for worms and insects of all kinds, especially the yellow wireworm, which in a day will destroy our finest plants. As they will now be pushing into growth more water may be given, but it is far better to err on the side of dryness than over-moisture. Air should be given to them night and day, and as in the case of Auriculas in case of frost the frames should be covered with matting or some other warm material. It will be well now to see what pots are required, and if any are wanted to get them in and have them all well cleaned and ready for use. The broken pots for drainage should also be clean, as nothing can be too sweet or clean for the production of good flowers and healthy plants. Where the compost has not been already prepared it should be got ready now—two parts good turfy loam, one part leaf mould, and one part old manure, with some road grit or charcoal to keep it open. The hop growers about here make their own charcoal for drying the hops, and I find that the refuse of this, the smaller pieces, with the sand used for banking up the fire, makes a capital ingredient for this and many other plants.

CHRYSANTHEMUMS.—I forbear making any notes on these, as so much advice is given to growers in the pages of the Journal. Now will be the time to add to stock, but really the multitude of new varieties makes it very perplexing as to what to choose. This I must leave to other hands.

GLADIOLUS.—Although next month will be the time for planting the corms, yet it will be necessary to make preparation for it this month. Collections should be looked over, and where any deficiencies are detected now is the time to supply them, as the corms were well ripened last autumn. I find that they are keeping well, and plump. Some few, such as Shakespeare and Horace Vernet, are beginning to move, but, as a rule, they are in a quiet state. It will be easy, where the beds are marked out and measured, to calculate how many corms are required. It must be recollected that if the corms are of good size they may be cut into two, and thus the stock doubled. Some writers have expressed a prejudice against doing this, but I can bear witness to the fact that some of my best blooms and corms were the produce of cut corms. I have even successfully cut one into three.

PANSIES IN POTS.—I have, February 11th, just completed potting my small stock, as I think this is the only satisfactory way of growing them. You may, of course, grow them in beds, but then you have to reckon with the severity of the weather, drenching rains, severe frost, &c., and if the winter be a hard one your Pansy bed will present rather a dilapidated appearance by this time, unless you are in a favourable locality, and then when your plants begin to grow and to show bloom look out for slugs, ravenous after their long fasting, and ready to devour foliage, blooms, or anything that comes in their way. Moreover, to one a septuagenarian, it is an immense advantage not to have to stoop over them to examine their beauty. They are now in a cold frame, the light of which is tilted to admit plenty of air. There they will remain until they are removed next month.

ROSES.—Here, again, such copious directions are continually given about the culture of Roses that it is hardly necessary to say much about them, but it may be well to assure growers that if they find vacancies in their beds they may, with a fair prospect of success, plant now, especially if they can procure them from a nursery near at hand. Some of the best blooms of Tea Roses that I remember seeing were

shown from plants what had been planted out in May. In some forward districts pruning will take place now, but in general it is better to defer that operation until March. The mulching had better still be left on the buds, for although much frost is not to be expected, yet it is better to err on the safe side.

RANUNCULUS.—The 12th of February was generally considered the orthodox day to plant Persian Ranunculus. I managed to get mine in yesterday, the 10th, and to-day it has been very wet. In planting them it is necessary to be very careful as to the depth at which they are put, 1¼ inch being the exact depth that suits them. It is better to plant firmly, for there is the less chance of worms displacing them, which is one of the great annoyances in their culture.

There are other florists' flowers, such as the Dahlia and the Hollyhock, which I have not mentioned because I do not myself grow them, and I like simply to notice those I do grow, and I would also add that I grow not for exhibition, but for my own pleasure; although I am very strongly of opinion that as it is with the Rose so it is with other flowers, that if the exhibitor's culture be followed, and his choice of kinds adhered to, there will be far more satisfaction than by adopting a lower standard of cultivation.—D., *Deal.*



CŒLOGYNE CRISTATA.

MR. W. GRIX, The Gardens, Gledhow Hall, Leeds, sends us a flower of Cœlogyne cristata with three perfectly formed lips, and no other indication of deformity. There are the normal three sepals, two petals, and one column, and the three lips are not distorted in the slightest degree. Cases of this kind are usually accompanied by other deformity, or are caused by the fusion of two or more flowers, but there is no trace of the latter in the present example. It is simply a curiosity and detracts from rather than adds to its beauty.

TWO NEW ORCHIDS.

MR. FRED HORSMAN of Colchester recently flowered a most distinct variety of Lælia anceps, which has been named Measuresiana in honour of Mr. R. H. Measures, Streatham. The flower is of great size and good colour, but the most remarkable character is seen in the lip, which is of unusual breadth, very open and richly marked. The other is a new Lycaste that has been named Tautzi. It may be briefly described as follows:—Pseudo-bulbs 6 to 8 inches long, deeply furrowed; flowers about 5 inches in length, sepals and petals recurved. In colour the sepals are crimson brown, the petals primrose, and the lip pure white. The throat of the flower is dotted with small crimson spots like Phalænopsis amabilis.

CORYANTHES MACRANTHA.

MR. J. MCGRATH, Blackmoor, West Derby, Liverpool, sends a flower of this extraordinary Orchid, respecting which I have previously published the following note.

"In this and others of the genus the lip is formed like a 'bucket,' one portion of which secretes a fluid that falls into the lip and remains there until evaporated, or it sometimes fills the 'bucket' and overflows by a spout. C. macrantha has projections upon the lip, which tempt bees to gnaw them; and Dr. Cruger has observed that "the bees may be seen in great numbers, disputing with each other for a place on the edge of the hypochil. Partly by this contest, partly perhaps intoxicated by the matter they are indulging in, they tumble into the 'bucket' half full of fluid; they then crawl along in the water towards the anterior side of the 'bucket,' where there is a passage for them between the opening of this and the column. If one is early on the look out, as these bees are early risers, one can see in every flower how fecundation is performed. The humble bee in forcing its way out of its involuntary bath has to exert itself considerably, as the mouth of the epichil and the face of the column fit together exactly, and are very stiff and elastic. The first bee, then, which is immersed will have the gland of the pollen mass glued to its back. It passes out with this, and perhaps enters the same or another flower, when the pollen masses are placed directly upon the stigma in coming out as before."

Mr. C. Darwin, in his "Fertilisation of Orchids," has fully described the peculiarities of structure in Coryanthes, Gongora, Acropera, Stanhopea, and allied genera.

DENDROBIUM SPLENDIDISSIMUM GRANDIFLORUM.

THIS magnificent hybrid, one of Messrs. Veitch & Sons' Chelsea productions, attracted a large share of attention at the City sale rooms last Tuesday, when a plant with two leads and ten grand flowers were sold for 55 guineas. The flowers were 4½ inches in diameter each, with broad open lip deeply coloured, the sepals and petals being also richly tinted. It is from the same species as D. splendidissimum, but finer varieties were selected as the parents, and the difference is very perceptible when the original hybrid and the other are seen together as in Messrs. Veitch's houses. Both are good, but grandiflorum has a much bolder and more effective flower.

CŒLOGYNE CRISTATA ALBA.

MR. R. H. MEASURES, The Woodlands, Streatham, has probably the finest specimen white Cœlogyne in flower at the present time that could be found in private or other collections. It has thirty-two racemes, or a total of 170 flowers, large, massive, and pure white. It is a grand example of this beautiful Orchid, and is highly prized by its possessor.—L. C.

ORCHIDS AT ST. ALBANS.

IF any person entertains a doubt respecting the commercial importance of Orchids at the present time, a visit to Messrs. F. Sander and Co.'s nursery at St. Albans would effectually dispel the illusion. Few indeed, except those actually engaged in the business, have an adequate idea of the vast development of Orchid trade within recent years. The amount of capital now invested in these plants by amateurs and nurserymen is enormous, Orchid admirers are rapidly increasing in numbers, and quite a little army of persons is employed in one way or other in collecting, growing, and distributing them. The business has advanced far beyond the period of a fantastic craze, for the horticultural value of Orchids is now widely recognised; the distinction, beauty, durability and fragrance of their flowers have obtained for them a place not only in the collections of wealthy and aristocratic amateurs but in those of amateurs of all grades, and even in those of strictly commercial people, who supply the great markets with choice flowers. It has been repeatedly proved that many of the difficulties supposed to attend Orchid culture are purely imaginary, and in consequence hundreds have taken them in hand who would have been otherwise deterred from doing so.

These and many other thoughts are suggested by an inspection of the St. Alban's nursery, and the following notes may convey some idea of what was seen there in a couple of hours. The new nursery (for the original establishment is situated in the centre of the town) is a short distance from the Midland station to the right of the line in going from London. It comprises a great block of glass houses from 100 to 350 feet long, and with corridors connecting the ends of the houses 300 feet in length. The houses are span-roofed, running from north to south, the corridor on the south side also connecting with the printing rooms, warehouses, potting and packing departments, which will be referred to presently, while the corridor on the north side has been considerably widened, and is being converted into a Cattleya house. The block is thus nearly triangular in form, the apex of the triangle being formed of the offices and Mr. F. Sander's residence. The entrance hall at once gives an idea of the character of the establishment; it is spacious, simple, yet extremely tasteful, designed in Elizabethan style, and wainscotted in plain carved oak and cedar. It is separated by glass partitions and doors from an ornamental rockery, and this in turn on both sides leads to the two corridors, so that a complete tour of the houses can be made without once passing into the open air. The rockery itself is very interesting, being an improvement upon the design represented at the Indian and Colonial Exhibition of 1886. Real Tufa has been employed in a picturesque manner as bold jutting rocks, with miniature fountains and waterfalls to heighten the effect. Numerous Orchids have been tried, to test which succeed best planted out in this way, and an especial feature has been made of Cypripedium caudatum, which it is anticipated will afford a remarkable effect when in flower. Lælia elegans also thrives well, seeming thoroughly at home; Lælia anceps, various Cattleyas, Sobralias, and Cœlogynes are freely employed, and of the beautiful Arpophyllum spicatum there is a fine specimen. Some little difficulty has been experienced in finding Orchids suitable for training to the roof, but Vanda teres is being tried, and appears likely to succeed, as it will have a light sunny position such as it most enjoys. We could scarcely imagine what the effect might be in a few years' time with the roof covered with the growths and charming flowers of this Orchid. Orchid rockeries could be introduced in many houses, and with a few Ferns or other plants to furnish them a most agreeable feature would be afforded. Few other flowering plants can, however, be satisfactorily employed with the Orchids, or a discordant effect results.

It would be impossible to describe within moderate limits the contents of the numerous houses entered from the corridor, but a few words may be given respecting the structures themselves before noting some of their principal occupants. It should be first said that they are devoted exclusively to Orchids, so that in their construction, heating, &c., especial provision has been made for the requirements of the cool, intermediate, or warm house species. All the larger houses have side stages and paths with a raised central stage near the glass, and a path under the ridge, where a good view is obtained of the closely packed banks of plants, in several cases 200 to 300 feet long. The stages are of open wooden trellis, beneath them being large beds of leaves, which afford a constant humidity, the beneficial effect of which is shown by the

sturdy healthy condition of the plants throughout. But much time or labour cannot be devoted to damping, and it is consequently accomplished in the following simple but effective manner. Beneath the stages at the sides of the walks run inch iron water pipes perforated at near intervals and furnished with taps so that it can be turned on in sections, and the surfaces of leaf beds, paths, walls, &c., are thus moistened as frequently and as thoroughly as required. Most of the houses have an incline to the south, and to insure the water remaining in the paths the tiles or iron bricks are partially hollowed in the centre, but not sufficiently to interfere with walking. Another mode is to have depressions at the sides of the paths next to the walls with divisions about a foot apart, which also serve to retain the water deposited on them. Extensive tanks are provided for rain water, which is almost exclusively used for supplying to the plants, and shading is in all respects been carefully constructed. The roof is of the ridge and furrow style, and the shading material is to be run from ridge to ridge, thus leaving space for the free admission of air. The centre stage rests on arched brick divisions, with a stage at one side and small rockeries between the houses on the other. Over the paths are wires for the suspension of baskets or blocks, and when the house is filled it will have a fine appearance, as it is very light, the iron supports and ornamental corner pieces being of chocolate colour.

The contents of this house are varied, but include large stocks of popular and useful Orchids. Odontoglossums, for instance, have a large proportion of the space devoted to them, O. crispum (Alexandræ) alone filling several long houses, while O. Pescatorei fills a house exceeding 200 feet in length. These are mostly in pots, but some are planted out in side beds and soon become established. They include innumerable



Fig. 24.—ANGRÆCUM SANDERIANUM.

provided by light tiffany on rollers, or a light cloudy mixture such as has been repeatedly described. As a convenient means of catching slugs small shallow saucers are filled with fresh bran and placed along the walls or stages, and these being closely examined every evening after dusk numbers of would-be depredators are caught and destroyed.

The space beneath the stages in the larger houses is utilised in another and very important way, thousands of imported plants being suspended there until they "plump" or show signs of vitality by commencing root growth. It is their first stage after removal from the cases in which they arrive, and as soon as they are found to have recovered sufficiently they are placed in pots or baskets, but mostly the former, and this is a work of some magnitude where so many thousands have to be dealt with every month. Excessive heat is avoided, but a liberal supply of piping is allowed, and several miles are required to provide the requisite temperatures for so large a block of houses, Weeks' tubular being the boiler employed. In the corridor Cattleya house alone over a mile of pipes has been found necessary, and this house has fine varieties, as fresh treasures are being constantly discovered. O. vexillarium is also largely represented by vigorous plants of different sizes, and no difficulty seems to be experienced there in the culture of this Orchid. There is a good stock of the remarkably distinct and beautiful O. Harryanum. O. nævium majus, and scores of the valuable hybrids or intermediate varieties are arranged in one of the houses. Cattleyas and Lælias are seen in thousands, of all sizes and in all stages, from small pieces in 60 or 48-size pots to huge masses, like one example of Cattleya Bowringiana 4 feet long by 3 feet wide, and comprising 300 pseudo-bulbs and sixty new leads. Cattleya Trianæ and its varieties are admirably represented, and contribute largely to the floral display at the present time. All the best of the other Cattleyas are also included, while of Lælias, L. anceps is in strong force both of the richly coloured and the white varieties. The handsome Lælia elegans and its numerous varieties have considerable space devoted to them, some of the plants being of great size. Cœlogynes, such as C. cristata Lemoniana, the Chatsworth variety, and maxima, are flowering together, and the superior characters

of the latter are seen at a glance, the flowers of great size and well meriting the name bestowed upon it. Dendrobiums, Oncidiums, and many other large genera are represented in a similarly extensive manner, but in what may be termed the miscellaneous collection, the plants in flower at the present time of Angræcum Sanderianum (fig. 24) are most conspicuous. The plant is one of the introductions of Messrs. Sander & Co. from the Comoro Islands, and was recently certificated at South Kensington, when our illustration was prepared from the plant shown. The flowers are pure white, and are borne in long slender graceful drooping racemes, which have had as many as twenty-five to thirty flowers each. It is well adapted for basket culture, and though usually grown in a warm house it has been quite satisfactory in a temperature as low as 55°. It may be classed amongst the really useful Orchids, as it is easily grown and most profuse in flowers.

As already mentioned adjoining the south corridor are the warehouses, &c., which are in three floors. The upper is occupied with printing room and offices in connection with the production of that fine illustrated work on Orchids, the "Reichenbachia," issued by this firm. The potting and unpacking departments occupy other floors, and the ground floor is devoted to the work of packing and transport. Piles of huge cases are seen that are being rapidly opened and their contents examined, for it can be imagined that with sixteen collectors at work in as many different regions the supply of imported plants is an extensive one, indeed it is surprising how they can all find purchasers. Profits must be large occasionally, but heavy losses have also to be met, for undue delay in transport in a tropical climate often means the loss of thousands of valuable plants collected at great expense.

Only a few words can be accorded to the old nursery in the town, though it deserves a full notice. Fourteen compact span-roof houses with a corridor at the end are devoted to Cypripediums of all the choicest species, hybrids, and varieties obtainable, with Phalænopses, Vandas, Cattleyas, Pescatoreas, and innumerable others, while experiments in crossing and seed-raising are there being carried out on a large scale.

It only remains to add that the presiding genius of this great establishment is Mr. F. Sander, who possesses a remarkable share of intelligent enterprise and energy, and he is assisted by a thoroughly practical manager in Mr. J. Godseff.

HEATING AND VENTILATING NEW BUILDINGS AT ETON.

THE Governors of Eton College have found it necessary to augment the accommodation of the College by the erection of extensive additions, comprising a new chapel, museum, and numerous class rooms. These works are now being carried out from the designs and under the direction of A. W. Blomfield, Esq., M.A. In the present day much greater attention is paid to the warming and ventilating of such buildings than was formerly the case, and the necessary arrangements for effecting these purposes are to be carried out by Messrs. J. Weeks & Co., of Chelsea, to whom Mr. Blomfield has entrusted this branch of the work. The cost of the new buildings is about £40,000. The system to be adopted is that of admitting fresh warm air into each room by passing it through Weeks' hydrocaloric warming and ventilating coils, which have of late years been much used in all sorts of public and private buildings and by Her Majesty's Government, and the action of which is consequently pretty generally understood. They admit, day and night, a constant current of fresh warm air into the building, either moist or dry at pleasure, no cold air whatever being admitted in severe weather.

The arrangements for carrying off the vitiated air are on a somewhat comprehensive scale, and constitute a new departure in ventilation. The warm respired air, from the upper part of each room, will be drawn through ventilators specially constructed to prevent down draught, into large horizontal air ducts placed against the ceiling of the various passages. These ducts will be the full width of the passages, and will be formed by means of a false ceiling, with a space of about 2 feet between it and the floor above. This is a novel and effective means of getting over the difficulty, which appears to have been long felt in providing space for ventilating shafts, and that without at all injuring the passages, the height of which, as a rule, is very much out of proportion to the width. These horizontal air ducts will meet at a large vertical air shaft, which will pass out through the roof and be surmounted with a special cowl in the form of an ornamental turret. By means of a simple and efficient gas apparatus placed in this vertical shaft, it will be made a powerful exhauster, and will confirm and strengthen the upward tendency already possessed by the vitiated air, will draw in a steady and constant current from the rooms and pass it out above the roof of the building without the possibility of return.

The advantage of this arrangement will be felt both summer and winter. In the summer a constant stream of fresh cool air will be drawn through the rooms, and in the winter a constant stream of fresh warm air, and that without opening either windows or doors. The whole atmosphere of the building can thus be changed two or more times, if necessary, each hour.

THE WINTER ACONITE, ERANTHIS HYEMALIS.

A SHRUBBERY border here affords a striking illustration at the present time of the value of this plant for shady positions under large trees or any shady woodland walk where its roots would not be disturbed. I am told the roots were planted about twenty-five years ago in several small patches; they now cover a space of ground 60 feet by 30 feet with their rich yellow flowers, and continue spreading in all directions, large quantities of seedlings appearing every year. With us they are the first of the spring flowers, as they appear about a fortnight before the Snowdrops are in flower, and are consequently much appreciated. We find them very useful for decorating the mansion if the roots are carefully lifted and tied in moss. After two or three days in the house they may be replanted and will flower again the next season. They are also very pretty for dinner table decoration, &c., when gathered, and many other purposes.—W. H. DIVERS, *Ketton Hall, Stamford.*

THE MEANS OF PROTECTION POSSESSED BY PLANTS.—Mr. F. M. Campbell, F.Z.S., F.L.S., &c., President of the Hertfordshire Natural History Society, recently delivered the Presidential address on the above subject at the annual meeting of that Society held at the Free Library, Watford. The different means of protection touched on were as follows: Protection by means of concealment, protection by means of objectionable flavour; protection by means of objectionable flavours and colour; protection by means of appliances; protection by means of mimicry; protection of seeds and spores. In his introductory remarks Mr. Campbell stated that just as weak nations require special guarantees for their independence so do weak organisms require special protective modifications, and instances of this occurring in plants are common. In regard to concealment of plants, one of the most interesting cases of "hiding" was seen in the hardy Cyclamens, where, after the flower falls off in January the capsules become wholly or partially buried, and the safety of the seeds, which do not ripen till June, is secured. As to protection by means of objectionable flavour several well known plants were mentioned, including Rhododendrons, Ferns, Mosses, Aconite, Hemlock, Hellebore, &c., and it was also stated that the flowers or petals of plants were in general more acrid than their leaves, hence they are much seldomer eaten by insects. Among many instances of protection by means of appliances were mentioned the Holly and Thistles, and in connection with the latter Mr. Campbell remarked that their armament was very necessary, as they were when crushed excellent food for horses and cattle. Speaking of protection by means of mimicry Mr. Campbell explained that what was meant by the expression was that one plant was so much like another that an observer could not distinguish between the two without critical examination; for instance the Dead Nettle being exceedingly like the common Stinging Nettle, which is avoided by many animals. Light seeds were protected by being carried away by the wind, Nuts were either made inconspicuous or armed with a spiny covering. The gay coloured fruits were an invitation to a repast, and contain pips which passed through the animals eating their pulpous covering with an unimpaired or possibly augmented vitality. In conclusion he said that whatever clearness of intellectual vision mankind might obtain in the future, they would be better able than ourselves to realise that they have but read a few syllables from the title page of the Book of Nature.



CHRYSANTHEMUM SHOWS.

WE have received notices of the following fixtures for the Shows of 1888:—

National Chrysanthemum Society, Metropolitan Shows, September 12th and 13th; November 7th and 8th; and January 9th and 10th, 1889.
Provincial Show at Sheffield, November 16th and 17th.
Kingston-on-Thames, November 6th and 7th.
Portsmouth, November 7th, 8th, and 9th.
Teddington, November 8th and 9th.
Southend, November 13th.
Brighton, November 13th and 14th.
Putney, November 13th and 14th.
Winchester, November 13th and 14th.
Reading, November 15th.
Pembroke, November 15th.
Liudfield (Sussex), November 15th and 16th.
Sheffield and West Riding, November 16th and 17th.
Liverpool, November 20th and 21st.
Birmingham, November 21st and 22nd.
Hull, November 22nd and 23rd.
Pontefract, November 23rd.

A NOVEL CLASS

MR. W. HOLMES of Hackney has proposed that the National Chrysanthemum Society adopt a novel class at the next Westminster Exhibition. The general plan is as follows—"That a challenge trophy and £10 in money be offered for the best collection of forty-eight blooms, twenty-four incurved and twenty-four Japanese, contributed by any Chrysanthemum or horticultural society on the following conditions—First, The entry to be made in the name of the Society. Second, An

entry fee of 10s. 6d. will be charged to societies not affiliated with the National. No entry fee to be charged to affiliated societies. Third, Each society competing must be prepared to guarantee that the blooms staged are cut from the collections of its members only. Fourth, That the forty-eight blooms may be the production of one or more growers at the option of the society competing. Fifth, No limit as to number of entries from each society, but no society will receive more than one prize. Sixth, The cash will be paid to the Treasurer of the society winning the award, to be equitably divided between the contributors." The idea has been freely discussed and criticised, several difficulties having been pointed out, but the preponderance of opinion up to the present is in favour of the scheme.

CHRYSANTHEMUM PRINCESS OF TECK.

We are told "there is nothing new under the sun," and in all probability the subject which I wish to draw attention to, although it is new to me and Mr. Crossling, and to all those whom I have spoken to about it, it is perhaps well known to some of the readers of the Journal.

When visiting Mr. Crossling's Penarth Nursery the other day I was very much surprised to find a lot of well-grown plants of the above variety in one of the houses, flowering as profusely as Chrysanthemums do in November. The plants were dwarf and well furnished with branches, which were covered with healthy leaves to the rims of the pots, and the flowers seemed fresher (though not quite so large) and whiter than they do in the autumn. The idea of prolonging the Chrysanthemum season to February and March was new to me, and while admiring the healthy state of the plants, I felt anxious to know when they were propagated, and the treatment they had received to produce an abundance of flower at this season, and asked Mr. Crossling. He informed me that the cuttings were inserted some fifteen months since, that the plants in question flowered at the usual time last autumn, and were cut down after flowering at Christmas and placed in a cold frame for protection, as he wished to increase the stock. Shortly after being placed in the frame they began to grow and show signs of flowering, when they were removed to a warm greenhouse. The plants were not shaken out of their pots and repotted in fresh soil, nor the points of the shoots stopped at any time, but they were liberally supplied with liquid manure to encourage them in making a sturdy growth.

Mr. Crossling finds it a great acquisition to flower at this season when white flowers are scarce, and thinks he will have a succession of flowers of Princess of Teck till the end of March.—A. Pettigrew, *Cardiff.*

THE CHRYSANTHEMUM.

(*Continued from page 138.*)

SUMMER TREATMENT.

If they can be placed singly in rows so much the better, but in any case set them so far apart that a person can pass about amongst them with ease without injury to the foliage, and also to facilitate the free circulation of air and exposure to the sun with a view to having the wood well ripened, which is most important for the production of good blooms. If the soil is moist when the plants are potted no water will be required for a day or two, after which they should have a good soaking. Great care must be exercised in giving water at this period, for too much causes them to become unhealthy, which retards them the whole season. During hot weather a gentle syringing two or three times a day, followed by a good dash with the hose pipe in the evening, is beneficial. In cold sunless weather this should be discontinued, or mildew will be encouraged. A light syringing occasionally with lime and soot water will assist in developing a dark healthy foliage. In addition to these items attend carefully to watering and staking as required, keep the stems free from side shoots and the base from suckers, to concentrate the strength in the main stems, at the apex of which will appear in due time a flower bud known as the "crown bud," in some varieties early in August, and in most cases before the month is out. In some varieties which require a longer period than the majority to develope, it is advisable to take the crown bud early in August, but in most cases, and especially in an early season, the crown bud should be rubbed off and the shoots reduced to one, which will in a short time produce the terminal bud, surrounded by a number of lesser buds, which may be rubbed off, taking the centre one for the bloom.

An explanation of the term "taking the bud" may not be out of place here. It does not signify that the bud is taken off, but that the accompanying side shoots or buds are removed, leaving the bud which is "taken" for the production of the bloom. Generally speaking the best time to take the buds for this class is the last three weeks in August, commencing with the Japanese, which take the longest period to develope their buds; this gives them time to ripen well before being housed. When taking the buds remove the superfluous shoots or buds with the thumb nail as soon as they can be handled without damaging the bud.

BUSH PLANTS.

Cuttings for bush plants should be struck in January and treated in the same manner as the others, potting as required until the plants are about 4 inches high, when they should be topped, and in the case of stronger plants again, after breaking into growth, when the shoots are from 4 to 6 inches high; at the next break thin the shoots to the required number. About the month of August, after the plants make their natural break, select what shoots are wanted and remove the rest. The number to leave must be regulated by the demand, whether for quantity or quality, and handsome specimens of these may be turned out by judicious training. When the buds appear in September, if the plants are required for decoration no disbudding is needed, but if larger flowers are desired they should be disbudded to the centre one on each shoot and all side shoots rubbed off. The plants throughout the season must be treated similarly to the others with regard to staking, watering, and tying. A very good method of producing a quantity of bloom with little trouble is to plant them out in good positions in the spring when all danger of frost is past. All the attention they require is an occasional watering and mulching in dry weather; tie loosely to a single stake in the centre. These should be lifted when the buds are setting about the end of October or early in November according to locality. Pot firmly and stand them under a north wall for a week or more, during which time they must be thoroughly soaked at the roots and syringed two or three times a day. If properly treated in this manner they suffer little and produce abundant blooms, which may be thinned or not according to circumstances.

CUTTING DOWN CHRYSANTHEMUMS.

Cutting down Chrysanthemums has a tendency to keep them dwarf and cause them to start uniformly. Plants for this operation should be treated as previously advised for large-flowering varieties, but instead of topping train with a single stem. They should be cut down about the third week in May, a fortnight or three weeks before their final potting. Do not cut too deeply into the hard wood, or they will not break so freely. After breaking select the required number of shoots and treat as previously advised. The tops may be struck and flowered in 6 or 7-inch pots with a single stem.

Pompons.—Pompons are generally grown as bushes for decoration; they should be struck at the same time and treated in a similar manner to bushes of the large-flowering varieties; 8-inch pots for the majority of these will be large enough for the final potting.

Single Varieties.—The same remarks apply to single varieties, which are also singularly well adapted to the production of small plants by striking the points of the shoots about the end of August and placing them singly into 4-inch pots. Other classes may be similarly treated in this respect, but these are most suitable for the purpose.

Summer-flowering Varieties.—Since the introduction of summer-flowering varieties the season has been greatly prolonged. They are most useful for herbaceous beds and borders, and are not valuable as pot plants except in a late wet season, when they may with advantage be lifted and potted for the better development of their flowers. Strike cuttings in February, top once or twice, and plant out in May.

Autumn-flowering Varieties.—Following closely upon the last-named are the early autumn varieties, which are always appreciated, blooming as they do when flowers are otherwise scarce. They may either be planted out and lifted when the buds are set or grown in pots; in the latter case treat as recommended for bushes in pots.

CHRYSANTHEMUM ENEMIES.

Insects, &c.—Green fly is the most persistent pest of the Chrysanthemum. Indoors either in spring or autumn this may be cured by fumigation or dipping the shoots affected into softsoap and water; but during the summer dusting with tobacco powder and smart syringings occasionally will effect a cure. The same remarks apply to black fly and thrips. A leaf-mining maggot often appears during summer; its whereabouts can easily be detected by the peculiar markings it causes on the leaves, which must be squeezed or cut out and destroyed. Another small maggot often infests the apex of the shoots about August; this must be persistently picked off. Earwigs have the credit of damaging the flower buds and young shoots; it is doubtful if this is the case, but as they do damage to the open flowers they are better trapped, which may be effected by placing inverted pots with a little hay inside on the tops of the stakes.

Mildew.—Mildew, which appears especially in damp weather, is the most troublesome pest to contend with. The best remedy where practicable is dusting with flowers of sulphur; failing this, mix the sulphur in the proportion of two handfuls to 4 gallons of water, and apply with the syringe, giving an occasional washing with the hose pipe in favourable weather.

MISCELLANEOUS DETAILS.

Feeding.—Feeding should commence when the pots are fairly well filled with roots; it must not be overdone, or the result will be gross growth at the expense of the blooms. Many and various are the manures recommended, but I prefer commencing with soot water, to be followed by guano or cow manure as the plants gain strength. Sulphate of ammonia, an excellent stimulant, requires to be very carefully used. In an ordinary way 2 ozs. to 4 gallons of water is sufficient, but as different examples vary so much in strength, it should be tested on a few plants before applying it generally. After the first week or two of feeding the stronger growing varieties must have some stimulant every time they are watered, commencing the application in a weak state, and increasing the strength until the maximum is reached; this should be continued until the flowers are three parts developed. For weaker growing sorts the same remarks apply, but the stimulant must be given weaker and not so often.

Top-dressing.—Top-dressing should be done when the roots appear on the surface; a soil similar to that recommended for the final potting, firmly rammed, is as good as can be used.

Housing.—The proper time to house the plants can only be learned by experience of the different varieties and the locality. Some varieties require a much longer time to develope than others, and should be housed earlier to be in full bloom at the same time; but this with other peculiarities of various kinds can only be learned by experience, and notes should be taken all through the season for guidance in the future. Generally speaking the first week in October is the best time for housing, but any showing colour before that time can be removed under cover at once, or they will damp as the flowers expand. Frequently, as was the case this season, a slight frost, with a prospect of more to follow, makes it advisable to house immediately. Indoors they should have all the light and air possible, with a little fire heat in dull damp weather.

Staging.—Large-flowered Chrysanthemums are seen to the best advantage arranged so as to form a sloping bank from back to front. Bushes appear best when mixed with the usual occupants of the conservatory, especially dark foliaged plants, such as Camellias, &c. Standards and trained specimens may stand isolated where they can be seen well from all sides. Cut down those that have flowered, and keep them in a cool house as near the glass as possible, with the object of rendering the suckers stocky until propagating time, when the same routine as before will be followed, with such alterations as each individual may consider necessary according to the success or otherwise which has attended his previous efforts.

INCURVED AND JAPANESE CHRYSANTHEMUMS AT THE NATIONAL SOCIETY'S EXHIBITIONS.

No one examining the accompanying tables can fail, I think, to be struck by the very conservative character of the incurved Chrysanthemums as compared with the Japanese, among which changes little short of radical are year by year taking place. For instance, in the case of the first forty varieties of the former the average date comes out as 1867, while the mean date for the same number of Japanese is only 1879. In other words, while the average age of the best incurved is twenty years, that of the Japanese is only eight years. Again, since my analysis came out last year there has been only one addition made to the list of the incurved, and this a sport coming in at the very end of it, and which, therefore, in no way disturbs the relative positions of the older varieties. Whereas the following new kinds find places for the first time in the list of Japanese—La Triomphante, Ralph Brocklebank, Madame J. Laing, Monsieur Freeman, Mr. H. Cannell, Mr. C. Orchard, Gloriosum, Mdlle. P. Dutour, and Mr. Matthew, several of which take quite prominent positions, thereby lowering the status of many of their elder brethren.

The November Show of the National Society was last year not quite so rich in incurved blooms as in 1886, a fact which was no doubt in a great measure accounted for by the trying nature of the summer and early autumn. On the other hand, the Japanese appeared in even greater force than before. The total number of flowers staged in each section at the three shows has been as follows :—

1885	Incurved	839	Japanese	835
1886	,,	1080	,,	1026
1887	,,	964	,,	1221
		2883		3082

The relative positions of the different varieties in the two tables are regulated by the average number of times they were shown at the three last November Exhibitions of the Society. In the case of those sent out in 1884 it has, however, been considered advisable to take only their last two years' average; while for the still newer sorts, those of 1885 and 1886, the number of times they were shown at the 1887 Exhibition has alone been considered in placing them.

INCURVED VARIETIES.

Position in Present Analysis.	Average Number of Times Shown in the Three Years.	Number of Times Shown in 1887.	Name.	Date of Introduction.	Raiser's or Introducer's Name.	Colour.
1	53·0	55	Empress of India	1859	Laing	Pure white.
2	45·0	53	Queen of England	1849	Salter	Blush.
3	44·3	40	Golden Empress of India	1875	Loader	Pale yellow.
3	44·3	54	Jeanne d'Arc	1881	Lacroix	Blush, tipped rosy purple.
5	41·7	49	Lord Alcester	1882	Fremantle	Pale primrose.
6	40·7	38	John Salter	1866	Salter	Cinnamon, orange centre.
7	37·3	40	Lord Wolseley	1882	Orchard	Bronzy red.
8	36·0	39	Mr. Bunn	1879	Bunn	Bright golden yellow.
9	33·3	33	Prince Alfred	1864	Davis	Rosy carmine.
10	32·3	26	Nil Desperandum	1862	Smith	Dark orange red.
10	32·3	29	Princess of Wales	1864	Davis	Blush, tinted rose.
12	26·3	35	Lady Hardinge	1861	Clark	Silvery rose.
13	25·3	25	Alfred Salter	1856	Salter	Lilac pink.
14	24·0	23	Jardin des Plantes	1860	Salter	Rich golden yellow.
15	21·7	26	Mrs. W. Shipman	1877	Shipman	Fawn colour.
16	20·7	16	Prince of Wales	1865	Davis	Purple.
17	20·3	23	Barbara	1872	Salter	Bright orange amber.
17	20·3	17	Mrs. Heale	1866	Heale	White, tinted rose.
19	20·0	16	Princess of Teck	1868	Pethers	White, tinted pink.
20	19·0	16	Hero of Stoke Newington	1871	Forsyth	Rosy pink.
21	18·7	17	Refulgens	1871	Salter	Bright purple maroon.
22	18·0	12	Cherub	1862	Smith	Orange, tinted rose.
23	15·0	16	Golden George Glenny	1876	Dixon	Bright rich yellow.
23	15·0	19	White Venus	1872	Shrimpton	Pearl white.
25	14·7	22	Beverley	1863	Smith	Cream white.
26	13·7	17	Golden Queen of England	1859	Salter	Canary yellow.
27	12·7	16	Princess Beatrice	1868	Wyness	Rosy pink.
28	12·3	8	Mr. George Glenny	1870	Waters	Bright primrose yellow.
29	12·0	8	Venus	1865	Salter	Lilac, tinted peach.
30	11·0	10	Emily Dale	1872	Dale	Pale straw colour.
31	10·7	10	Mr. Brunlees	1865	Smith	Indian red, tipped gold.
31	10·7	6	Mrs. George Rundle	1867	Rundle	Pure white.
33	10·3	16	Empress Eugénie	1866	Pethers	Rosy lilac.
33	10·3	8	Golden Eagle	1863	Davis	Dark orange.
35	9·3	9	Eve	1865	Smith	Creamy white.
36	9·0	5	Lady Slade	1864	Smith	Lilac pink.
37	8·3	13	Mabel Ward	1881	Martin	Buff yellow.
38	8·0	9	Baron Beust	1868	Pethers	Chestnut red, tipped yellow.
39	6·0	8	Novelty	1860	Clark	Blush.
40	5·0	3	Antonelli	1862	Smith	Salmon orange.
40	5·0	5	Mrs. Norman Davis	1887	Mizen	Golden yellow.

Empress of India still heads the list of the incurved, but the position of this flower, although apparently well assured, has in reality within the last two years been seriously threatened by Jeanne d'Arc. Indeed, but for the marked inferiority of its form in 1885 Jeanne d'Arc would even now occupy the premier place. The following varieties—Queen of England, Jeanne d'Arc, Lord Alcester, Mr. Bunn. Lady Hardinge, Mrs. W. Shipman, Beverley, Empress Eugénie, and Mabel Ward—were last year all staged more frequently than at either of the two preceding exhibitions. On the other hand, Nil Desperandum, Prince of Wales, Mrs. Heale, Princess of Teck, Cherub, Hero of Stoke Newington, Mr. G. Glenny, Mrs. G. Rundle, and Golden Eagle were not shown in as many stands as in the previous year. All the newer varieties (those sent out since 1878) except Lord Wolseley, which was not quite so frequently shown as in 1886, have improved their positions; and Mrs. Norman Davis, although of such very recent introduction, already finds a place on the list.

Madame C. Audiguier, with a total of 149 blooms at the three exhibitions, still stands well above all other varieties in the Japanese section. Among the more established kinds, Mdlle. Lacroix, Fair Maid of Guernsey, Thunberg, Val d'Andorre, Japonais, Meg Merrilies, M. Tarin, Baronne de Prailly, and last, but by no means least, Belle Paule, were all surprisingly well shown. The flower last named was staged altogether only six times in 1886, but at last year's exhibition no less than twenty-six times, or as frequently as Comte de Germiny. On the contrary side must be mentioned Peter the Great, Triomphe du Nord, and Fanny Boucharlat, which were but very indifferently represented.

Turning now to the newer varieties, and beginning with those which made their first appearance in 1884, M. J. Laing was shown more than twice as many times last year as at the previous exhibition, and consequently has done well, but neither Fernand Féral nor Madame de Sévin, both so full of promise in 1886, have made any advance upon the positions they then obtained. Of the 1885 varieties we must first mention L'Adorable, which has already risen to the tenth place on the list, also well placed at No. 19 stands La Triomphante. Next comes Madame J. Laing at No. 26, followed at No. 29 by M. Freeman, while Gloriosa brings up the rear at No. 49. Considering how recently they have come

JAPANESE VARIETIES.

Position in Present Analysis.	Average Number of Times Shown in the Three Years.	Number of Times Shown in 1887.	Name.	Date of Introduction.	Raiser's or Introducer's Name.	Colour.
1	49·7	54	Madame C. Audiguier	1879	Marrouch	Deep mauve.
2	41·0	50	Mdlle. Lacroix	1880	Lacroix	Sulphur white.
3	36·7	37	Jeanne Délaux	1882	Délaux	Dark velvety brown.
4	36·0	43	Fair Maid of Guernsey	1872	Downton	Pure white.
5	28·7	40	Val d'Andorre	1880	Marrouch	Chestnut, shaded orange.
6	27·7	31	Elaine	1871	Downton	Pure white.
7	27·0	26	Comte de Germiny	1881	Veitch	Nankeen, striped crimson brown.
8	26·7	34	Thunberg	1881	Veitch	Pale golden yellow.
9	24·3	30	Criterion	1868	Salter	Amber.
10	24·0	24	L'Adorable	1885	Délaux	Canary yellow, shaded violet.
11	23·0	23	Soliel Levant	1874	Dr. Audiguier?	Pale yellow.
12	22·7	23	Madame B. Rendatler	1877	Délaux	Orange, shaded to yellow.
12	22·7	22	Monsieur Astorg	1883	Délaux	White rose, violet centre.
14	22·0	22	Maiden's Blush	1886	Stevens	Creamy white, tinted blush.
15	21·7	14	Peter the Great	1876	Carey	Lemon yellow.
16	20·7	22	Triomphe de la Rue des Châlets	1876	Pertuzès	Salmon red.
17	18·7	19	Marguerite Marrouch	1878	Marrouch	Crimson, edged gold.
18	18·0	23	Japonais	1878	Délaux	Bronze yellow.
19	17·0	17	La Triomphante	1885	De Reydellet	White, tinted rose.
20	17·0	25	Meg Merrilies	1870	Salter	Sulphur white.
21	16·0	18	Boule d'Or	1882	Bernard	Yellow, tipped bronze.
22	15·0	16	Hiver Fleuri	1879	Délaux	Cream white, tinted rose.
22	15·0	21	Monsieur Tarin	1883	Délaux	Silvery violet rose.
22	15·0	15	Ralph Brocklebank	1886	Winkworth	Yellow.
25	14·7	24	Monsieur J. Laing	1884	Délaux	Crimson brown and gold.
26	14·0	15	Alba Plena	—	———	Delicate creamy white.
26	14·0	14	Madame J. Laing	1885	Délaux	White and rose.
28	13·7	21	Baronne de Prailly	1868	Salter	Rose blush.
29	13·0	26	Belle Paule	1881	Marrouch	White, edged rose.
29	13·0	14	Monsieur Ardène	1878	Lacroix	Rose lilac.
29	13·0	13	Monsieur Freeman	1885	Délaux	Rosy and violet.
29	13·0	13	Mr. H. Cannell	1886	Cannell	Deep yellow.
33	12·7	7	Triomphe du Nord	1857	———	Crimson maroon.
34	12·0	12	Mr. C. Orchard	1886	Cannell	Carmine and yellow.
35	11·7	12	Flamme de Punch	1883	Délaux	Orange, shaded red.
36	11·3	15	Fernand Féral	1884	Délaux	Rosy mauve.
37	10·7	12	Monsieur Brunet	1879	Lacroix	Violet mauve.
38	10·3	12	Madame de Sévin	1884	Délaux	Rosy purple.
39	9·7	10	Monsieur Délaux	1877	Délaux	Crimson, with yellow centre.
40	9·3	5	Fanny Boucharlat	1879	Délaux	White, with pink tinge.
41	8·3	9	Balmoreau	1878	Délaux	Rose purple.
41	8·3	9	Dr. Macary	1878	Délaux	Rose, tinted white.
43	8·0	2	Agréments de la Nature	1881	Délaux	Golden yellow, shaded brown.
43	8·0	8	Duchess of Albany	1882	Jackson	Orange buff.
43	8·0	9	Grandiflora	1862	Fortune	Bright yellow.
43	8·0	5	Striata	1862	Fortune	White, striped plum colour.
47	7·7	5	Comtesse de Beauregard	1868	Salter	Light rose.
48	7·3	9	Golden Dragon	1867	Salter	Bright yellow.
49	7·0	7	Gloriosa	1885	Waterer	Bright yellow.
49	7·0	6	Monsieur H. Jacotot	1883	Délaux	Crimson, tipped gold.
51	6·7	3	Sarnia	1876	Carey	White, shaded violet rose.
51	6·7	4	Source d'Or	1882	Délaux	Orange, shaded gold.
53	6·0	3	Bonquet Fait	1879	Délaux	Bright rose pink.
53	6·0	6	Mdlle. P. Dutour	1886	Délaux	White, shaded rose.
53	6·0	6	Mr. Matthew	1886	Cannell	Terra cotta.

out some of the 1886 flowers take remarkably high positions. For instance, at No. 14 we find Maiden's Blush, and at No. 22—or only three steps lower down than the veteran Meg Merrilies from which it originated—Ralph Broeklebank. At No. 29 comes Mr. H. Cannell, and at No. 34 Mr. C. Orehard, while Mdlle. P. Dutour and Mr. Matthew each at No. 53 just manage to obtain a place.

REFLEXED, LARGE ANEMONE, LARGE HYBRID ANEMONE, POMPON ANEMONE, AND POMPON VARIETIES.

In the following short lists the principal varieties in each of the above sections will be found arranged according to the number of times they were staged at the Society's last year's November Exhibition.

Reflexed.—Cullingfordii, Peach Christine, King of Crimsons, Golden Christine, Cloth of Gold, Pink Christine, Chevalier Domage, Phidias, White Christine, Felicity, Dr. Sharpe, Mdlle. Madeleine Tezier.

Large Anemone.—Emperor, Gluck, Lady Margaret, Acquisition, Georges Sand, Louis Bonamy, Fleur de Marie, La Marguerite, Laing's Anemone, Madame Goderau.

Large Hybrid Anemone.—Fabian de Médiana, Madame Berthe Pigny, Sœur Dorothée Souillé, Minnie Chaté, Mdlle. Cabrol, Jeanne Marty, Marguerite Villageoise, Madame Ghys, Ratapoil, Souvenir de Lardenne.

Pompon Anemone.—Mr. Astie, Antonius, Marguerite de Coi, Miss Nightingale, Madame Chalonge, Marie Stuart, Perle, Astrea, Madame Montels, Regulus.

Pompon.—Mdlle. Marthe, Golden Mdlle. Marthe, Prince of Orange, Miss Wheeler, Black Douglas, Mdlle. Elise Dordan, Marabout, President, Rosinante, La Pureté, Pygmalion.

My thanks are due to Mr. C. Harman Payne for supplying the dates and raisers' names of those varieties which appear now for the first time in the list of Japanese varieties, also to the Rev. H. A. Berners and Mr. J. Burrell for the assistance they kindly gave me in taking down the names at the show.—E. M., *Berkhamsted.*



HARDY FRUIT GARDEN.

Pruning Peach Trees.—The good old plan of unnailing or otherwise loosening the young growths of Peach and Nectarine trees in the autumn assists to ripen them thoroughly, and as they are thus clear of the wall it also materially retards flowering. As the buds are now far advanced towards opening, the time has arrived for pruning and renailing or retying the trees. If when the trees were loosened much of the old fruiting wood was cut away very little more pruning is now needed. There being always the risk of the loss of much bloom from late frosts and cold easterly winds, it is unwise to be too free with the knife, a better plan being to lay in as much fruiting wood as possible without injuriously crowding it. Nor is it advisable to shorten the young growths, especially at this late date. Unpruned shoots break more evenly and strongly, and all subsequent growth or the formation of the tree may be regulated by disbudding and stopping. Cut any shoots not wanted clear away and as much of the old wood as can be spared. Also practise foreshortening, especially in the case of large old trees. When large straggling branches are shortened to well placed younger wood the latter is naturally much benefited thereby, and foreshortening, as this is termed, is also necessary to induce the formation of young wood near the base or centre of the tree. It is there such is most wanted, not at the extreme ends of the trees.

Dressing and Training the Trees.—Insect pests, including scale, red spider, and aphis, as well as mildew are frequently troublesome on Peach and Nectarine trees, and if not already done now is the time to attempt a timely clearance. Various remedies are to be had from all seedsmen and horticultural sundriesmen, the well-tried Gishurst Compound being still as popular as any. Anything in the shape of a wash and applied through a syringe is usually most effective, as this, in addition to thoroughly wetting the whole of the wood, penetrates into all the crevices of the walls and also destroys the aphides and other pests that lodge in the ground. Not many of these will survive a thorough wetting with water heated to a temperature of about 120°, to every gallon of which is added 2 ozs. or one wineglass of petroleum. The latter will be kept from floating on the surface if every second syringeful is forcibly returned to the can. When training the trees first arrange and fasten all the old wood or framework and then fill in with the bearing wood. If nails and shreds are necessarily used see that none of the former come into contact with the wood, or damaged bark followed by gumming will inevitably result to the great injury of the tree. It is a good plan to tie young growths where possible over the naked main stems, this protecting these from fierce sunshine and cold winds, also economising space.

Pruning and Training Young Fruit Trees.—If maiden trees of either Apricots, Peaches, Nectarines, Plums, Cherries, Pears, or Apples are planted with the idea of forming these into fan-shaped trees they ought now to be cut down to within 6 inches of the point of union between the stock and scion. Four shoots may eventually be laid in from these, and sometimes it is possible to obtain six medium-sized well ripened growths in one season. Any thus treated last year to have all the branches shortened to a length of about 12 inches, and from these enough fresh shoots will be obtained to lay the foundation of a good tree. Apricots, Peaches, and Nectarines succeed admirably when grown with one central or main stem only, this being trained obliquely and the fruiting wood laid in right and left. Maidens are the best to start with in this instance, these being shortened back to a length of 18 inches. During the summer two or three pairs of side branches and one leader ought to be formed on them. When fan-shaped trees of any of the above mentioned fruits are planted these are usually furnished with eight or more branches. No leader should be permitted on these, as they are almost certain to take a strong lead and eventually overgrow the rest of the tree. If there is an odd or central branch on newly received trees cut it back at once, and thereby secure a pair if these are needed to furnish space. All the branches if sound and well ripened to be laid in to their full length and neatly fastened to the wall, or in much the same style as they were previously trained. To cut them hard back is simply suicidal, much valuable time being wasted before the branches again attain a similar length. Timely disbudding and stopping are all that are necessary to insure the formation of sufficient young wood to complete the furnishing of the tree. Should, unfortunately, any of the branches be damaged or be found unripe cut these back to sound or well-ripened wood.

FRUIT FORCING.

Peaches and Nectarines.—*Earliest Forced House.*—The fruit will soon have completed the first swelling, and will enter upon the stoning process. If the thinning has been carefully attended to there will be little more than the necessary quantity—namely, one fruit to every square foot of trellis covered by the trees. More Nectarines are usually left, which accounts for their being under-sized as compared with Peaches. If there is more fruit than specified above remove the smallest. There is no danger of the fruit falling during stoning provided the wood was thoroughly ripened last season, and the trees are not unnecessarily taxed by too many fruit. During the stoning process keep the temperature as equable as possible, as a sudden check by draughts of cold air in the daytime, and too high a temperature in the night, may prove disastrous. The night temperature may range from 60° to 65°, but 5° less will be safer in severe weather, and in the daytime 70° to 75° with sun heat, and about 65° by artificial means when the atmosphere outside is cold and the sky overcast. See that the growing shoots are secured to the trellis as they advance, keeping those retained to attract the sap past the fruit stopped at the second or third joint. Red spider must be kept in check by syringing with water at the same temperature as the house, or if thrips and brown aphides appear fumigate carefully when the foliage is quite dry. For destroying the insects named nothing is safer and better than a solution of softsoap at the rate of 2 ozs. to the gallon of tepid water. Be not deceived by the syringing—*i.e.*, making the surface of the border look wet, whilst the soil beneath may be too dry, but give good supplies, and if the trees are at all weak apply liquid manure.

Second Early Forced House.—Disbud gradually, removing the strongest and ill-placed shoots, and have all the leading shoots tied down, taking care not to overcrowd them. Thin the fruit by degrees, it having set very thickly will require extra attention, removing those on the under side of the trellis or otherwise badly placed, but leave those that are well exposed to light and air until they indicate by free swelling the necessity for further reduction, then remove the smallest. Syringe the trees early during fine days, and ventilate early in favourable weather. The temperature may range from 55° to 60° at night and 60° to 65° by day, ventilating at the latter temperature, and closing the house when the heat is decreasing, allowing an advance of 5° to 10° from sun heat.

Houses Started Early in February.—The trees are now in flower or well advanced. As we have many more flowers than will be needed, all those on the under side of the shoots have been removed by drawing a gloved hand the reverse way of the growths, and even yet there are three-fourths more than will be required of fruit for the crop, therefore we have thinned them still further where most crowded, especially on the weaker shoots. Maintain the night temperature at 50° to 55° and 55° by day with a little ventilation, as a close atmosphere is fatal to a good set. Ventilate freely above 55°, and allow an advance to 65° with sun heat. Fertilise the blossoms in the early part of fine days either by shaking the trellis or dusting the flowers with a camel-hair brush when the pollen of the individual flower is ripe. Syringing must cease whilst the trees are in flower, but the floor should be sprinkled morning and afternoon, avoiding cold currents of air.

Houses to Afford Ripe Fruit in Late July and August.—These should be closed, syringing two or three times a day until the buds show colour, when it must cease. The inside borders must be brought into a thoroughly moist state by repeated waterings if necessary, and with the borders properly drained liquid manure may be given to weakly trees and those having a superabundance of flower buds. There are too many buds by at least five-sixths. Our trees have the principal triple buds all fruit buds, and as we find nothing weakens the trees so much as heavy cropping, we shall ease them of at least half the blossom buds as soon as they can be rubbed off. To farther help them we have mulched the surface of the inside border with 2 to 3 inches thickness of rather short fresh manure, which colours the water in watering, and will help the active feeders, for all on the Plum stock—viz., Apricots, Peaches, and

Nectarines, as well as Plums, push active feeders or adventitious roots in advance of the growth, hence the recuperative power of lifted trees, and to which much of the advantages of lifting is due. Maintain a temperature of 50° by day and 40° to 45° at night, advancing to 65° with sun and full ventilation.

Late Houses.—The weather we have lately experienced has usefully retarded the flowering. If the lights are off there need not be any hurry in replacing them before the middle of March, as that will be early enough to have the trees in full flower by the middle of April, and then they have the benefit of the sun heat. Many late houses are unheated, which is a great mistake, as the flowers even in April are not safe from severe spring frosts, and the fruit does not ripen if the late summer be cold and sunless. A gentle heat during the flowering period does much towards a good set, and in autumn artificial heat ripens the fruit and wood, plumping the buds wonderfully. Houses with fixed lights should be ventilated freely, and take care to keep the borders in a moist state.

Unheated Houses or Wall Cases.—Where these are employed the chief consideration is to retard the flowering. Ours have the roof lights still off, and will so remain till the middle of March, the bloom buds not taking any harm until they are somewhat advanced and are beginning to show colour, after which it is not safe. Anything required in the way of pruning, securing to the trellis, &c., should be completed. Those that have not had the roof lights removed may need supplies of water, so as to bring the soil into a thoroughly moist state, and may have the surface mulched 2 or 3 inches thick with rather short somewhat fresh manure. Ventilate freely to retard the flowering to as late a period as possible.

Where wall cases are employed for Apricots, let the lights remain off until the flower buds begin to show white, and, after they are placed on, ventilate freely, as nothing is so fatal to Apricot blossom as a close, moist atmosphere. Plum cases may have the lights placed on by the middle of March, similar remarks applying to Cherries, also Pears.

CHERRY HOUSE.—Unremitting attention must be given to the ventilation. A free circulation of air passes through the house whenever the temperature exceeds 50°, the amount of air to be regulated by the conditions of the external atmosphere. Employ fire heat only to prevent the temperature falling below 50° in the day, and to maintain a night temperature of 40° to 45°. Attend to fertilising the flowers. Watch closely for the appearance of aphides, but it will not answer to fumigate whilst the trees are in blossom, nor will it be necessary provided they were perfectly clean previous to the flowers expanding. It may, however, be had recourse to as soon as the fruit is set. Grubs infest the Cherry under glass ; one kind of grub rolls itself up in the leaves, and can be eradicated by squeezing, but the other is the greater pest, and will be found encased on the under side of the leaves, giving them the appearance of being scalded. From the leaves it makes its way to the Cherries, perforating and destroying them. The only means of riddance is to examine the trees occasionally and destroy the grubs.

CUCUMBERS.—With increased light and solar heat evaporation is correspondingly increased, necessitating a greater supply of atmospheric moisture. The evaporation troughs must be kept filled with liquid manure, damping the house so as to maintain a genial atmosphere, and syringing the plants lightly during bright afternoons. A night temperature of 65° is sufficient, allowing 5° advance when the external air is mild, 60° being the minimum in the morning when the weather is severe. Liquid manure may be applied once or twice a week. Do not allow the fruits to hang too long, or they may weaken the plants ; besides, they keep fresh for several days with their stalks inserted in saucers of water. Thin the fruits well, especially on plants just coming into bearing, stopping the shoots one joint beyond the fruit, removing superfluous growths and bad leaves as they appear, as well as staminate blossoms.

The weather continues unfavourable for early forcing in pits and frames heated with fermenting materials, the temperature being difficult to maintain to a point calculated to maintain steady progressive growth, a close atmosphere resulting in a superabundance of moisture, not unfrequently causing the loss of the plants. When the moisture cannot be expelled by admitting air much may be done by sprinkling lime or soot round the plants, those substances having a strong affinity for moisture. Continue to prepare material for making fresh beds for linings, and sow seed as successional plants are required.

MELONS.—We have little to add to our remarks in the last calendar except that the weather being so unfavourable the plants shifted into 5-inch pots may not yet be planted out, and if so they should be planted before they become root-bound. Pot later sown plants when they show the second leaves, employing warm moist soil. The plants from the seed sown early in February will soon be ready for planting out. Make up the bed for them, and make also a successional sowing. Those who are growing Melons in dung-heated frames should make a successional sowing every fortnight or three weeks until May, making fresh beds at similar intervals to receive the plants, so as to maintain an uninterrupted supply of fruit. Maintain a night temperature of 65° to 70°, 5° less if the weather be cold. 70° to 75° by day, admitting a little air at 75°, allowing the temperature to rise to 85° with increased ventilation, closing at 80° or 85°, sprinkling at the time every available surface ; and if the temperature rise to 85° or 90° so much the better. Keep the bottom heat at from 75° to 80°.

FIGS.—*Earliest Forced Trees in Pots.*—Plunged in bottom heat, water will be required abundantly, applying it at the same temperature as the bed, or 70° to 75°, and alternating with liquid manure. Maintain the temperature at 60° to 65° at night, admitting a little air at 70°, but not so as to lower the temperature, closing at 75°, and if the temperature rise to 80° all the better. Thin the fruit as soon as the best placed and most promising can be decided upon for the crop. The thinning should be done some time before the last swelling commences.

Early-forced Planted-out Trees.—Those started at the new year are making good growth, and should have the points of the shoots which issue from round the base of the terminals pinched at the fifth or sixth leaf. Attend to tying the young shoots to the trellis as they advance, thinning where they are too crowded. Keep the night temperature at 55° to 60°. When it reaches 65° by artificial means in the day admit a little air, increasing the ventilation with the temperature, and reducing it in like manner, closing at 70°, syringing twice a day, and maintaining a genial atmosphere.

PLANT HOUSES.

Zonal Pelargoniums.—To succeed those rooted in autumn for spring flowering cuttings should be inserted at once. Select these from plants that ceased flowering about Christmas and have since been stored in cool houses. Cuttings of this description root with greater certainty early in the season than those from plants that have been grown in heat. The cuttings will root freely if inserted singly in small pots and placed on a shelf in a temperature of 60°. Keep the soil about the cuttings in an intermediate state for moisture ; if they become too wet at this season of the year they are liable to damp off. Old plants that have been kept dry for some weeks may be pruned and placed in a temperature of 50° until they commence growth. If the atmosphere is moderately moist a light syringing on fine days will be needed until they show signs of growth, when the soil about the roots may have water. Prepare other plants for cutting back by keeping them dry to harden them. All young stock in active growth will require more water at their roots than they have had up to the present time. The earliest will be showing their flower trusses, and will come forward rapidly from this date. Pinch the shoots of later plants of both single and double varieties that are not required to flower before May. The latter required to supply trusses for cutting throughout the London season may be placed into 7-inch pots after they have broken again into growth. Pot firmly in good loam and one-seventh of manure with a little sand added to insure firm, sturdy growth.

French and Fancy Pelargoniums.—For decoration it is a mistake to place these in too large pots, for by so doing growth is encouraged at the expense of flowers. All in small pots that are ready should be transferred into 5-inch pots, a very suitable size to flower them in. Use the soil advised for Zonals, and press it firmly into the pots. Arrange the plants close to the glass, water carefully, and admit air on favourable occasions to insure a firm, sturdy growth. When the pots are full of roots feed liberally with artificial manure applied to the surface of the soil. The flower stems of the earliest plants will be advancing rapidly, and they should not be hurried too much in this stage. Tie out the shoots with neat stakes so as to expose the inner foliage to the light. Cuttings should also be rooted for late flowering. These can be taken from old stock plants reserved for the purpose, which can then be thrown out, or any shoots from the earliest that do not show signs of flowering. The cuttings will strike under the same conditions as Zonals.

Heliotropes.—To succeed the earliest now showing flower place others into 5-inch pots and grow them in a temperature of 55° to 60°. Under these conditions the plants will grow rapidly and soon flower, provided they have been well cared for and are in good condition. Half the stock may have the shoots pinched once or even twice according to the time they are required to flower. Insert cuttings where these flowers are appreciated until they come into flower outside.

Petunias.—The latest of the young plants that were wintered in 2 and 3-inch pots may be transferred into the 5-inch size. Place them close to the glass and encourage growth, insert cuttings for succession, and sow seed of any selected varieties. The seed should be sown on the surface of fine soil in pots or pans, gently watered and covered with a square of glass, until the seed germinates, which it will quickly do in a temperature of 60°.

Carnations.—The old Crimson Clove, Gloire de Nancy, Souvenir de la Malmaison, and others that are appreciated for cutting and decoration indoors should be potted at once from the 3-inch pots in which they are now in into 6-inch pots. Grow them close to the glass in any cool light structure where frost can be excluded. Avoid placing them in a close or confined atmosphere, which would soon draw them up weakly and ruin them.

THE BEE-KEEPER.

PRACTICAL BEE-KEEPING.—No. 30.

THE practice of extracting honey from cells in juxtaposition to those which contain eggs and larvæ in different conditions in various stages of progress cannot be too strongly condemned. It is urged by some that if the revolutions of the extractor are reduced to a certain number, and that that pace is not exceeded, no harm will be done to the brood, and that the honey will not be contaminated by

the juices which one might expect to see thrown out. If the brood nest is glutted with honey it is in nearly all cases due to the negligence of the bee-keeper. If sufficient room is continually given above the brood nest to employ the bees, and empty cells are always ready to hold any probable harvest of honey, the bees will not store any large quantity below, but will carry it up and store it in the position in which instinct apparently leads them to store it. Most amateur bee-keepers, and not a few who profess to have great practical experience, are far too eager to keep down the speed of the extractor, and consequently brood is destroyed and thrown out, and the quality of the honey is deteriorated. If the bee-keeper has the great misfortune to have a glutted brood nest, he must take such measures as will no doubt suggest themselves to his mind to remedy the evil; but in no case should such combs be allowed to enter the extractor unless the bee-keeper is willing to sacrifice some brood, and unless the honey so extracted is intended either for his own personal consumption or for use in the apiary.

Bee-keepers are often puzzled to know what description of extractor is most suitable for ordinary purposes. Price is of course a consideration, but when purchasing an appliance which may be expected to last for years, too great a stress should not be laid upon this point. Happily for the man who has not much cash to spare, the cheap extractors are quite equal to if not the superior of the more complicated machines with gearing, cogwheels, and other contrivances which in theory no doubt are a great assistance, but in practice very often do more harm than good. Geared extractors, which give so many revolutions of the cans to each turn of the handle, are responsible for more smashed and damaged combs than all other kinds put together. The simpler the better, then, must be the guide of a bee-keeper in purchasing an extractor. The can below the "cages" must hold some 40 lbs. of honey at least. The "cages" must be strong, and the wire netting against which the combs lie when the honey is being ejected from the cells should be strengthened by bars of strong wire, or even thin iron or steel, running transversely across them. This is a most important point. The ordinary cage is not sufficiently strong to bear the pressure, and the netting often gives away at the corners, thus bringing the machine to a full stop, breaking the combs, and disappointing the person who is working, and who naturally desires to get along with all possible speed. When this wire netting thus breaks out it occasions very considerable delay and damage, and the point is therefore worthy of attention. Extractors have been made from time to time, and some are advertised at the present time, to take more than two frames at once. I never had one in my possession and never saw one working, but it seems to be the prevalent opinion that no extractor of a really serviceable type has yet been made which is capable of taking more than two frames at once. By paying attention to these points most bee-keepers will be safely able to buy a suitable extractor.

The four points to which attention should be paid by the inexperienced bee-keeper, especially in purchasing an extractor, are:—

1, Simplicity.
2, Capacity to hold 40 lbs. of honey at least.
3, A two-comb size.
4, Other things being equal, the cheapest.

It is very easy to uncap a good level comb, but it has already been observed that it is a most difficult matter to unseal an irregular, badly built, series of cells. Such combs should either at once be put straight, or, if this is impossible, destroyed. Two knives are necessary in order to uncap combs with facility. One should be placed in hot water while the other is being used. Thus the knife not actually in the hand of the operator is cleansed repeatedly of any honey and wax adhering to it by the heat, which also enables the operator to pass the knife rapidly beneath the cappings, and to remove them in sheets. The "Bingham" knives are very good for the purpose, but any strong sharp knife may be pressed into service. The cappings should be allowed to roll down the comb in front of the knife, so that the whole surface covering is removed without more than necessary trouble. If the cappings are not removed as a whole, or if the pieces fall on to the exposed surface of the honey behind the knife, it is most difficult to clear them away, and yet if they are allowed to remain they prevent the honey coming freely from the cells. The whole side of a comb can be cleared without breaking the roll of cappings if the operator is skilful and knows how to go about his work.

Enough has now been written upon this subject to enable those who wish to do so to extract from their full combs. Experience alone can teach them some of the devices which they will learn by degrees to adopt in order to facilitate their work; but in concluding we may advise every bee-keeper to turn the cage very slowly at first, gradually increasing the pace until the honey is freely thrown from the cells; if a rapid pace is adopted to begin with, a smash is nearly always the result. "Slow and sure" is a good old proverb, and one which should always be borne in mind by the bee-keeper. It would be tedious, and altogether unnecessary, to mention any particular make of extractor, but if the machine is purchased from a firm of good standing, reliance may generally be placed upon the workmanship, and there is but a small possibility of dissatisfaction owing to inherent defects in the appliance itself.—FELIX.

DEPOSING AND INTRODUCING QUEENS BY THE DIRECT METHOD.

DEPOSING a queen or queens and the safe introduction of another are, perhaps, two of the most important matters connected with bee-keeping, and on which profitable bee-keeping so much depends. The necessity of having young queens at the head of all stocks throughout the season, and at different periods, is very great. The teaching that "queens were at their best when three years old," advanced in comtemporaries up till a very recent date, led to great loss of many who depended entirely upon what was written for their instruction. That queens sometimes live to a great age I have had ample proof; still we must not hope that such long-lived queens can be profitable, and except in the case of a valuable pure-bred one, for the purpose of breeding queens from, all queens should be deposed during the month of July, and a young fertilised one take her place. Catching the aged queen by the ordinary methods employed is sometimes by no means an easy task, and very often a complete failure, which so upsets the young operator as to cause him to give it up in disgust, and leave the bees to their own dealing in such matters, which often ends in having either a drone breeder or a hive queenless.

By the proper use of carbolic acid, manipulation is an easy, if not a pleasant matter, compared with older methods. The use of carbolic acid, known to me many years since, was held in abeyance for a long time, owing to the adverse reception it had from judges and exhibitors alike at our societies' show some ten or twelve years ago. I was laughed at by many southern magnates. After I made the use of carbolic acid in manipulations public, many attempted to claim the idea, and at one exhibition I caught one person in the act of appropriation, which I might have passed over had he been judicious enough not to have contradicted me when helping to explain the process.

The latest manipulation in catching a queen by the aid of carbolic acid will, I trust, help novices as well as practical bee-keepers to catch any queen expeditiously and without being stung. The hive in question is one that at the end of July at the Heather lost its old queen, which I had allowed to remain in the hive, as I was indisposed at the time. Owing to the extreme cold shortly after, my bees were brought home, and from the determination to rob I could not with safety manipulate outside, nor owing to the great number of bees in the hive, could I manipulate satisfactorily within doors. The queen I had in reservation for it was running a risk of being lost owing to the daily loss of her (at first) few attendants. On the 26th January the temperature had fallen from 47° night temperature and 54° day, to 33° Fahr. during the day, with every likelihood of being still lower, as it did occur on the morning of the 29th, the thermometer then registering 15°, the lowest temperature during the whole season. On the 26th, in addition to the low temperature, there was a keen north wind. There was no time nor encouragement for further delay. I accordingly set to work dismantling the hive of all coverings, and I may here add, that although no bees have been bred in this hive since the begin-

ning of August, they having worked up till the 21st September, they still occupy three breeding boxes of the ordinary Stewarton type. This is nearly three times longer than the proverbial six weeks bee life, and I expect some of them will be alive at the end of another six months.

To catch a queen from such a hive, and in such weather, would be to many an impossibility. After removing all the coverings the remaining undrawn slides were pulled out after I had smeared the top bars with the acid to prevent bees rising, and then the carbonised sheets were slipped down between the combs. I used no smoke, but it would have been better had I done so, as it quickens the bees and causes them to retreat more rapidly before the paper. Less than a minute emptied the topmost division, when I lifted it off, then I placed the remaining two upon an empty hive, and put the empty division upon the stand which the flying bees took to, but not so readily as if the covering could have been placed on intact. Bee-keepers should be careful never to alter the appearance or site of a hive after October. In as short a time as with the first the second division was cleared of bees, which was instantly placed beneath the first one taken off, that by this time was quite full of bees. Owing to the sheets of paper being deeper than one box very few bees remained in the third or under box, which were easily shaken from it and restored to its original place, and the hive to its original appearance. The bees being now about equally divided between the service and original hive, a few shakes in the former sent out many to the latter until a mere handful of bees and the queen remained in it. A slight look amongst the bees for a few seconds betrayed the presence of her majesty, and the finger and thumb acted as executioner.

During the operation, although cold and windy, the sun shone brightly, which was so far favourable. A number of bees failed to enter the hive when it was bare, but these lay chilled close to it, and were easily gathered, placed upon the top of the hive, and covered with another ; every bee revived, and not more than fifty became victims to the operation. If queen-excluder zinc was a perfect queen excluder (but it is not) I would use it in some cases, so that the queen could be easily caught. A more unfavourable fair day could not have been selected, yet the manipulation was a perfect success, and during a warm day in summer it was in addition to that a pleasure.—A Lanarkshire Bee-keeper.

(To be continued.)

TRADE CATALOGUES RECEIVED.

James Dickson & Sons, 108, Eastgate Street, Chester.—*Select Farm Seeds, 1888.*

Samuel Shepperson, Prospect House, Belper. — *List of Florists' Flowers.*

Oakshott & Millard, Reading.—*Farm Annual, 1888.*

T. S. Ware, Hale Farm Nursery, Tottenham.—*Catalogues of Choice Hardy Perennials, Chrysanthemums, Hardy Florists' Flowers, Pæonies, Hardy Ferns, and Climbing Plants.*

Hogg & Wood, Coldstream and Duns, N.B.—*Price List of Agricultural Seeds.*

Waite, Nash & Co., 79, Southwark Street, London, S.E.—*Wholesale Catalogue of Agricultural Seeds, &c., 1888.*

TO CORRESPONDENTS

*** All correspondence should be directed either to "The Editor" or to "The Publisher." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Lobelia Wave of Blue (*Elm*).—Write to Messrs. Cannell & Sons, Swanley. Most of the named varieties of bedding Lobelias are only kept true by cuttings.

Bouvardia (*Southlands*).—The sport will require at least a season's trial before it will be certain whether it is fixed or not. Take the shoot bearing the larger flowers and insert it as a cutting, cut it as low down as possible, and you will probably be able to obtain a root or two with it. There are several varieties in cultivation quite as good and some better, but probably you will be desirous of testing it out of curiosity.

Waterproof Labels (*Birdie*).—We are not able to answer your question, but think if you send a sample to advertisers of garden requisites, they will be able to supply you with what you require.

Glazed Flower Pots (*J. E.*).—We are unable to say where they are to be obtained, as we do not remember having seen them advertised. There have been several inquiries for them of late.

Grapes with Muscat Flavour (*Idem*).—Free setters of the true Muscats are scarce, but Grapes likely to meet your requirements are Madresfield Court Black Muscat and Mrs. Pearson ; if the latter has not a Muscat it has a rich Frontignan flavour. Both are good Grapes, and will keep some time. They require heat.

Royal Horticultural Society (*Inquirer*).—The meetings and shows are advertised a week previous to the dates. The next meeting, on March 13th, will, we presume, be held in the conservatory at South Kensington.

Early Potatoes for Market (*A Beginner*).—The old Ashleaf and Veitch's Improved Ashleaf are suitable ; the first-named is the earliest, but the second is a heavier cropper, and should be planted on a larger scale. Myatt's Prolific is the heaviest cropper of all, but is about ten days later than Veitch's, but a good crop is remunerative. Beauty of Hebron follows, and is largely grown by some farmers. M.P. is a very suitable round variety for market early in the season.

Violas (*T. L., Canterbury*).—Seed of the varieties you name is not offered by anyone, and if it were we suspect the seedlings resulting would show considerable variation from the parentage. The varieties can only be had in the form of plants raised from cuttings, and the sooner Violas are planted when the ground and weather are favourable in April the better. Planting with ordinary "bedding plants" after the middle of May is much too late for insuring free growth and prolonged flowering.

Propagating Begonias (*J. D.*).—We scarcely know what you mean by "Begonia silver leaf." Most of the silvery-leaved Begonias have very large leaves, and form thick flesh root-stems or rhizomes, not tubers. Such may be increased by dividing those root-stems, also by rooting the leaves after the manner of Gloxinias. The true Tuberous Begonias are propagated by dividing the tubers, also by topping the growths and striking the cuttings thus obtained in brisk heat in the spring, these forming tubers during the season of growth.

Violets Degenerating (*M. T. O.*).—Your Violets have reverted to the normal form by exhaustion. If you take strong runners and grow them in rich soil in an open position, mulching during the summer to keep the roots moist, you will produce stronger plants that may eventually afford large double flowers as before ; but it would be better to procure fresh plants from a vigorous stock. Early in April is a good time for planting, and a number of young plants from the best runners should be established every year.

Judging Begonias (*Exhibitor*).—If a judge saw a flower accidentally broken off a plant in staging at a show, or had satisfactory evidence of such accident, and the flower was placed where it grew, he would probably not disqualify the exhibitor, as he (the judge) would be satisfied that no fraud was intended or perpetrated under the circumstances ; but that is altogether different from the case mentioned last week of loose flowers being brought to a show in a box and tied on the plants ; and, for obvious reasons, that ought never to be allowed in the case of any plants placed in competition for prizes.

Cucumbers without Bottom Heat (*Subscriber*).—The finest crop of Cucumbers we have seen was grown without bottom heat in a house that had been used for wintering bedding plants. It will answer very well to put in the rough prunings as you propose, and then the turfy loam. With the two rows of 4-inch pipes for top heat you could safely put out the Cucumber plants the first week in May; these if strong would afford fruit early in June and onwards away through the summer. Cardiff Castle is good for market, not being too large, of excellent form, heavy, and a greenish colour. Telegraph is a little larger. Those two we recommend as reliable for any purpose.

Cleaning Stone Pillars (*R. S. T.*).—You will find nothing better than muriatic acid for cleansing your stone pillars. The acid should be diluted with water, but if the green has become thoroughly established on the stone you had better use the acid almost pure at first, which will destroy the whole of the green, and the pillars in a few minutes can be washed white. If the pillars are not very badly affected equal parts of the acid and water will clean them thoroughly ; but this entirely depends upon the stone, whether of a hard or soft material. If hard the acid must be used stronger than is necessary when the stone is of a soft nature. The diluted acid can be applied with an old scrubbing brush, but care must be taken that it does not get upon your clothes, or it will burn and destroy them. Chloride of lime mixed with water will also clean stone, but when it is of a hard nature it is not so effectual, besides leaving an unpleasant smell for days afterwards, which is not the case with muriatic acid.

Inarching Vines (*D.*).—There is no quicker and more certain way than uniting the young growth of a Vine in a pot to a growing lateral on an established Vine. As soon as the growths are firm enough to have a slice cut off each the work may be done, taking care that they are about of equal thickness, and that a good fit is made of the parts

placed in contact. Bind them together with a soft ligature, surrounding with moss and keeping it damp. The union will be effected in about a fortnight. The growth of the stock should then be suppressed—that is, the sub-laterals pinched off as they appear, and the extension of the scion, or attached growth, encouraged to make a strong cane.

Browallia elata (*T. H.*).—The seedlings should be potted either singly or three in a pot when they are large enough to handle. The latter make fine masses for conservatory or greenhouse decoration. After potting they should be kept on a shelf near the glass in a house with a gentle heat, and syringed every morning and evening to prevent attacks of insect pests. They should be stopped when a few inches high, repeating when they have grown a few inches, so as to keep them dwarf and bushy, it being necessary to stop them about three times to have well furnished plants. Supply liquid manure, not too strong, after the flower buds appear. They require plenty of light so as to insure thoroughly solidified growth and a floriferous habit.

Glazing Greenhouse (*J. E.*).—The plan of embedding the squares in putty, securing the glass with copper sprigs, and well painting the sashbars, the paint overlapping the glass the width of the rebate on which it rests, answers admirably, but it is not necessary to leave a space of one-sixteenth of an inch between the laps, the least possible space sufficing there, as the yielding nature of glass in good-sized squares renders it practically safe against breakage by the expansion of water in freezing. A smooth and ample bed of putty is essential, and the glass pressed firmly down into it, the portion squeezed out by the pressure being trimmed off quite smoothly on the under side of the bars. If there are any parts in which putty is not squeezed out below the glass the work will not be well done.

Tomato Disease (*Subscriber*).—Tomatoes are more liable to disease grown outdoors than when grown under glass. Excessive moisture, high feeding, and a close moist atmosphere are the chief points to be guarded against in the avoidance of disease. You may safely plant the Tomatoes out the first week in May in an unheated house ; indeed, we have a house of similar length, and we plant out at the end of April, the plants being raised in February, grown on in gentle heat and near the glass, to have them sturdy, shifting them into 5 or 6-inch pots when the 3-inch pots in which they are first placed are filled with roots. There is no fear of your failing with proper attention in having an abundant crop. The varieties you have are of the very best. Ventilating gear can be had of most horticultural builders. Write to the Thames Bank Iron Company, Blackfriars, London, stating your requirements.

Clianthus Dampieri Culture (*T. H.*).—As you have sown the seed you will perhaps find a difficulty in establishing any plants. No matter how carefully they are handled, in preventing injury to the roots in potting, the slight disturbance causes the death of the plants. It is best to sow the seeds singly in 5-inch pots, in which the plants should remain until they are transferred to those in which they are intended to flower. Turfy loam torn up with the hand, pressed firmly in the pots, adding a fourth of leaf soil and a sixth of charcoal in lumps from a pea to a hazel nut, form a suitable mixture. Good drainage is essential. Watering requires to be done very carefully, and never over the plants, they being kept rather high in the centre of the pots. We have grown this plant very successfully in rough fibrous but sandy peat. It requires warm greenhouse treatment and plenty of light. It does very well outdoors after the middle of June, but is best treated as a biennial, sowing one year and flowering the next.

Additional Piping in Conservatory (*W. H.*).—It will hardly answer to "tap" the pipes at the farthest end—*i.e.*, on two pipes only, as that would cause the heat to rise most rapidly in those, the other two being comparatively cool through the sluggishness of the circulation, and there would be little, if any, gain in the heating power. We suggest that you continue the whole of the pipes, both the flows and returns, along the back, and being above the floor they would radiate more heat than the whole of those in the "trench." The pipes should not be tapped, but brought above the floor line with an elbow, and another above, so as to get the pipes at the proper level, and then taken to the end with a slight rise, having an air pipe or tap at the highest part. This would give you a much better circulation, and consequently very much more satisfaction in heating. We presume the piping in the conservatory would not be above that in the other houses, therefore not interfering with the feeding of the boiler from the supply cistern.

Destroying Brown Scale on Ferns and Stove Plants (*R. S. V. P.*).—There are many insecticides that will effect the purpose with due care in following the instructions accompanying them, without any injury to the plants. Many gardeners, however, use petroleum, softsoap, and soda, dissolving 2 ozs. softsoap and ¼ oz. soda in a gallon of hot water, and to this adding a tablespoonful of the best crystal petroleum, mixing well by brisk stirring. It should be applied with a brush or sponge, preferably the former, for moving the scale, the shell being only the covering of vast numbers of young insects, and to reach these the shield must be displaced. With care in keeping the solution mixed in its application, preventing much of it reaching the roots, and not using it over young tender parts, it will not injure the plants, especially if shaded till they are dry, whilst it destroys scale. Its success, like other insecticides, depends largely on persistent use, thorough cleanliness being a chief factor in successful culture.

Zonal Pelargoniums Unhealthy (*E. S., Herts*).—The shoots and foliage are infested by what is termed "spot," due to a fungus, and being internal it is not remediable. It can, however, be avoided by judicious treatment. It usually arises from the plants being grown in too rich soil, the rooting space being large in comparison to that of the size of the plants and too moist, the disease being still further aggravated by keeping the structure too moist and close, with the plants too far from the glass, and the temperature too low for their healthy growth. There will probably not be any further spread of the mischief if you lessen the supply of water, not giving any until the soil becomes nearly dry, yet before the foliage flags, admitting air freely on all favourable occasions, especially in the early part of the day, so as to dispel the moisture before the sun acts powerfully on the foliage. A drier condition of the atmosphere will by those means be insured, and the plants being kept in a light position and not crowded may be expected to improve as the season advances.

Contributions (*J. H.*).—Your article will be inserted subject to a little revision that it needs. We do not expect gardeners as a rule to write with strict accuracy, and if they have something to say that may be useful to others and say it in plain well chosen language, their notes are willingly revised. It is surprising how well many hard-working gardeners express themselves, not a few of these having learned the agreeable art through the editorial supervision to which their communications have been subjected. If you have kept a copy of your note you will see in what way it has been altered, and perhaps improved. If you write again, please let the lines be at the least half an inch apart. Many fairly written articles cannot be revised through the writing being crushed together, as if paper were a costly product, and your note had a narrow escape from the waste paper basket through your attempting to crowd as many lines on a sheet as ought to have been distributed over two or three. Abandon the crowding system, which is neither good for plants nor descriptions of their cultivation, and your next article will "come out" better than the first.

Stove Flowering Plants (*Constant Reader*).—The Clerodendron to flower at the time you name should be started into growth about the third week in April, if grown under stove treatment the whole of the time. If brought forward in an intermediate temperature it might be started at the beginning of the month. It can easily be retarded. But in an ordinary stove temperature it will be in full bloom about ten weeks after starting it into growth. The Bougainvillea may be started a month earlier, but this depends very much whether the plant is old or young. If the former, and likely only to make short sturdy growths and flower on these, it need not be started before the Clerodendron, but if young and strong growths are made it will take at least twelve weeks from the time of starting. The Bougainvillea is much brighter in colour if its flowers are allowed to develope under cool conditions. Grow it in the stove until the flowers show, then gradually harden the plant and place it in a cool house until the flowers are freely developed. This will take twelve weeks.

Neglected Fig Tree (*A Subscriber*).—The proper way to proceed is to cut out a portion of the old bare wood and so admit of space for training in the younger parts. Avoid overcrowding, allowing sufficient space for the development of the foliage, so that all of it will be fully exposed to light and air, for unless the wood is thoroughly solidified as made it is useless expecting a crop of Figs. The training should be such as to keep the trees furnished with young wood evenly and throughout the space. As you mention Vines we presume the Figs are under them, in which case we fear your chances of growing Figs satisfactorily are extremely small, as they cannot have too much light. The trees having young shoots from the base 2 to 3 feet long shows they are not in a condition favourable to fruiting, the roots probably having too large a rooting area. Figs require to have the roots restricted to a comparatively narrow border of calcareous and gritty soil, the feeding being effected at the surface by mulching and watering with liquid manure. Stout, short jointed, thoroughly solidified wood is essential ; fruit will then follow, not otherwise. If you wish for more plants you may layer the young shoots into pots, preferably with a little of the two-year-old wood. Notching or ringing is not necessary, but it will facilitate the rooting. It may be performed now. Figs are best grown with a single stem, no suckers being allowed from the soil. Not being informed as to the time of starting the house, we are unable to assist you in the matter of temperature, but you may find something that will be useful to you in that respect by a perusal of our Work for the Week column, in which Figs are treated of from time to time.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*George Channing*).—1, Not known ; 2, Golden Knob ; 3, Winter Pearmain ; 4, Borsdörffer. (*E. F.*).—The Apple is Dumelow's Seedling.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*J. McGrath*).—Coryanthes macrantha, a very interesting Orchid. See page 174. (*W. J. R.*).—Cœlogyne cristata alba. (*J. L.*).—1, Peristrophe angustifolia variegata ; 2, Tillandsia Lindeni. (*J. B. S.*).—

1, Anemone fulgens; 2, Chionodoxa sardensis; 3, Narcissus obvallaris (see page 171). (*J. W.*).—The Fern is Polystychum aculeatum. The Dendrobium must be a good specimen, and has evidently been well grown.

COVENT GARDEN MARKET.—FEBRUARY 29TH.

Business steady with prices unaltered.

VEGETABLES.

	s.	d.		s.	d.		s.	d.		s.	d.
Artichokes, dozen	1	0	to	2	0	Lettuce, dozen	0	9	to	1	3
Asparagus, bundle	0	8		0	0	Mushrooms, punnet	0	6		1	0
Beans, Kidney, per lb.	1	0		0	0	Mustard and Cress, punt.	0	2		0	0
Beet, Red, dozen	1	0		2	0	Onions, bunch	0	3		0	0
Broccoli, bundle	0	0		0	0	Parsley, dozen bunches	2	0		3	0
Brussels Sprouts, ½ sieve	3	6		4	0	Parsnips, dozen	1	0		0	0
Cabbage, dozen	1	6		0	0	Potatoes, per cwt.	4	0		5	0
Capsicums, per 100	1	6		2	0	„ Kidney, per cwt.	4	0		0	0
Carrots, bunch	0	4		0	0	Rhubarb, bundle	0	2		0	0
Cauliflowers, dozen	3	0		4	0	Salsafy, bundle	1	0		1	6
Celery, bundle	1	6		2	0	Scorzonera, bundle	1	6		0	0
Coleworts, doz. bunches	2	0		4	0	Seakale, basket	1	3		1	9
Cucumbers, each	0	6		0	9	Shallots, per lb.	0	3		0	0
Endive, dozen	1	0		2	0	Spinach, bushel	1	6		2	0
Herbs, bunch	0	2		0	0	Tomatoes, per lb.	0	6		1	0
Leeks, bunch	0	3		0	4	Turnips, bunch	0	4		0	6

FRUIT.

	s.	d.		s.	d.		s.	d.		s.	d.
Apples, ½ sieve	2	6	to	4	6	Oranges, per 100	2	0	to	5	0
Nova Scotia and Canada barrel	10	0		18	0	Pears, dozen	3	0		6	0
Cobs, 100 lbs.	45	0		0	0	Pine Apples, English, per lb.	0	0		0	0
Grapes, per lb.	3	6		5	0	St. Michael Pines, each	3	0		5	0
Lemons, case	10	0		15	0	Strawberries, per oz.	2	0		0	0

PLANTS IN POTS.

	s.	d.		s.	d.		s.	d.		s.	d.
Aralia Sieboldi, dozen	6	0	to	12	0	Fuchsia, dozen	0	0	to	0	0
Arbor vitæ (golden) dozen	6	0		9	0	Genista, per dozen	6	0		12	0
„ (common), dozen	0	0		0	0	Hyacinths, dozen	5	0		10	0
Azalea, dozen	24	0		42	0	Hydrangea, dozen	0	0		0	0
Cineraria, dozen	8	0		12	0	Lilies Valley, dozen	18	0		24	0
Cyclamen, dozen	12	0		24	0	Lilium lancifolium, doz.	0	0		0	0
Dielytra, per dozen	12	0		18	0	Marguerite Daisy, dozen	9	0		12	0
Deutzia, per dozen	6	0		9	0	Myrtles, dozen	6	0		12	0
Dracæna terminalis, doz.	30	0		60	0	Narciss, per dozen	8	0		10	0
„ viridis, dozen	12	0		24	0	Palms, in var., each	2	6		21	0
Epiphyllum, dozen	10	0		18	0	Pelargoniums, dozen	0	0		0	0
Erica, various, dozen	9	0		18	0	„ scarlet, doz.	6	0		9	0
Enonymus, in var., dozen	6	0		18	0	Poinsettia, dozen	0	0		0	0
Evergreens, in var., dozen	6	0		24	0	Solanum, dozen	9	0		12	0
Ferns, in variety, dozen	4	0		18	0	Spirea japonica, doz.	12	0		15	0
Ficus elastica, each	1	6		7	0	Tulips, dozen pots	6	0		9	0
Foliage Plants, var., each	2	0		10	0						

CUT FLOWERS.

	s.	d.		s.	d.		s.	d.		s.	d.
Abutilons, 12 bunches	3	0	to	6	0	Lilies, White, 12 bunches	0	0	to	0	0
Anenome (Fulgens), 12 bunches	5	0		8	0	„ Orange, 12 bunches	0	0		0	0
Anemones (French), 12 bunches	3	0		4	0	Lily of the Valley, 12 sprays	0	6		1	0
Arum Lilies, 12 blooms	4	0		6	0	Mignonette, 12 bunches	3	0		6	0
Azalea, 12 sprays	0	6		1	0	Narciss, white (French) 12 bnuches	2	0		4	0
Bouvardias, bunch	0	6		1	0	Narciss, various, 12 bchs	1	6		3	0
Camellias, 12 bleoms	1	0		4	0	Pelargoniums, 12 trusses	1	0		1	6
Carnations, 12 blooms	1	0		3	0	„ scarlet, 12 trusses	0	6		0	9
Chrysanthemums, 12 bchs.	0	0		0	0	Primroses, 12 bunches	1	0		3	0
„ 12 blooms	0	0		0	0	Primula (single), bunch	0	4		0	6
Cyclamen, 12 blooms	0	6		1	0	„ (double), bnnch	0	9		1	6
Daffodils, Double, 12 bchs	5	0		10	0	Roses, Red, 12 blooms	4	0		8	0
„ Single, 12 bchs	6	0		12	0	„ (indoor), dozen	3	0		4	0
Daisies, 12 bnnches	2	0		4	0	„ Tea, dozen	1	6		4	0
Epiphyllum, 12 blooms	0	4		0	5	„ red, dozen (French)	1	6		3	0
Encharis, dozen	4	0		6	0	„ yellow	4	0		9	0
Gardenias, 12 blooms	9	0		18	0	Snowdrops, 12 bunches	1	0		2	0
Hyacinths, Roman, 12 sprays	0	6		1	0	Spiræa, bnnch	0	6		1	0
„ French, 12 bnnches	0	9		2	0	Stephanotis, 12 sprays	0	0		0	0
Lapageria, colonred, 12 blooms	1	0		1	6	Tropæolum, 12 bnnches	2	0		3	0
Lilium longiflorum, 12 blooms	6	0		9	0	Tuberoses, 12 blooms	2	0		3	0
Marguerites, 12 bnnches	2	0		6	0	Tulips, dozen blooms	0	6		1	0
						Violets, 12 bnnches	1	0		1	6
						„ (French), bunch	1	6		2	0
						„ (Parme), bunch	3	6		4	6
						White Lilac, per bunch	5	0		6	0



RESULTS.

"From all the ills which Heaven sends,
Save me, Oh save me! from too candid friends."

FORCIBLY was this old couplet brought to mind by the receipt of a letter from one of our readers, wherein, after certain complimentary expressions, came a suggestion that he and other "friends" would like us to prepare a balance-sheet of one of our farms, have it audited by some disinterested person, and submit it to the readers of the Journal as something tangible, that would add weight to our writings.

Well, now, we should have no difficulty in doing this, for our farm accounts are well kept, but we certainly do not intend doing so in compliance with such a suggestion. We may indeed publish some balance-sheets in due course, if we think the doing so will be likely to induce better practice on the part of any of our readers, but if we are expected to do so in proof of our veracity we must simply decline compliance. Even our candid friends will do us the credit to own that our writings possess the characteristic of frankness; we may also claim for them the much more important merit of truthfulness. We tell of our doings week after week in as plain and simple a manner as possible, and we certainly do expect our statements to be accepted in perfect good faith. If our readers do not so accept them, is it likely that any statement of accounts would induce them to do so? We think not, for we know full well what a plausible appearance figures may be made to assume to serve some dishonest purpose or to enforce some lame argument, and we have more than once done what we could to expose unfair statements of accounts. Let it not be supposed that we deprecate criticism, rather do we court it, so that it be fair and to the point. Our work is beset with too many difficulties, and we have been brought too much into contact with the stern realities of agricultural depression to shirk any responsibility.

Having thus briefly given our reasons for non-compliance, at any rate at present, with the wishes of our correspondent, we will now proceed to give a few extracts from our accounts in evidence of the difficulties which beset our work in practical farming, and to show him that we have to pay our way. It may be well to explain that when we took charge of our farms in the spring of 1885 they were cropped upon a four-course shift, which means that about one-fourth of each farm was in fallow. With the exception of a flock of ewes at the home farm, and a few starveling pigs, the whole of the live stock except the horses, and all the hay and corn had been sold, so that we had nothing wherewith to realise money out of the farms but the wool and the lambs till after harvest. We had a balance of £1000 to draw upon for current expenses, and we are glad to say that after a severe struggle that sum has practically been repaid, and the farms are now self-supporting. But we dare not say there is an end of our difficulties, for two more farms came upon our hands last Michaelmas, and we have reason to expect another one next Michaelmas. It is no light matter to take up such farms, for without exception they are in wretched plight, the soil being foul, poverty stricken, and badly cultivated, so that a considerable part of the profits derived from the improved farms are absorbed in bringing others into order as they fall in. Take for example a heavy land farm of 335 acres, part of which has clay so near the surface that all spring corn is practically a failure in such a drought as we had last year. Considerable sums of money have been absorbed by it in our work of draining, clay burning, manuring, and laying part of it down to permanent pasture, for nearly the whole of it was under the plough. When our accounts were balanced at the end of 1885 there was a debt against this farm of £418 8s. 3d. At the end of 1886 the debt had grown to £787 7s. 7d. owing to low prices for farm produce and our persistent efforts to improve the land. At the end of last year we were able to append a foot note to the effect that "This farm has paid all outgoings, and £67 5s. 2d. of the debt which was upon it at the beginning of the year, notwithstanding the practical failure of 50 acres of spring corn owing to drought."

Well, now, if all our farms had turned out as badly as this one, we should have become bankrupt long ago; but that was our worst case. Let us turn now to our best one. This is a mixed soil farm of 320 acres, of which we found some 80 under grass, but there was no flock, no pigs, and some of the land was very foul. Even this farm had a balance against it at the end of 1885 of £216 3s. 9d., but we had managed to get together some store pigs and sows, and

a certain number of ewe hoggets. As much chemical manure as we could afford was used in the spring of 1886, with such good effect that at the end of that year this farm had a balance to the good of £376 1s. 3d. This balance was carried on, and at the end of last year it had increased to £909 1s. 1d. Of course we expect to be asked about the valuation of farm stock, and we may answer that it would amount to about £100 less at the end of last year than it did at Christmas, 1886, because the corn was sold up more closely. We might go on and quote results from the other farms in hand, but it will suffice for our purpose to state generally that each farm has improved strictly in proportion to the nature of the soil, for our treatment of every farm has been equally fair.

It will, we hope, be understood that all tithes, rates, and taxes have been paid—at first out of our bank balance, and subsequently out of the money realised by the sale of farm produce—but we were unable to pay anything like a rent till the end of last year. It has indeed been an arduous undertaking, for in addition to soil difficulties we found others in faulty implements, and in some instances a want of them and of carriages that had to be supplied. No doubt our readers must sometimes think us over-persistent in our advocacy of the use of chemical manures, in conjunction with thorough cultivation in every other respect, but we have proved fully that without such manures and such thorough-going practice upon our part we must have failed in an undertaking, which under the circumstances may be said to have had something of rashness about it.

WORK ON THE HOME FARM.

Since writing our last note the land has been under snow, and glad are we to have winter corn well sheltered in such a manner. Winter Beans are especially liable to suffer from frost now; last year we lost a heavy per-centage of the plant, and we had, what we dislike so much, half crops on more than one field. Threshing Barley for seed, carting timber and gravel, has been our chief work during the past week since the carting of chemical manures was finished. We have been round to the whole of our farms to inspect the manure before it was mixed, and in every instance it is entirely satisfactory. The selection, purchase, and mixing of these manures involves much time and work, but undoubtedly it is labour well bestowed, for we get pure manures mixed in correct proportions for the different crops, and we effect a great saving upon the special mixtures of manure merchants, which we have so much reason to avoid. Compare the cost. Our manures when mixed average a bare fraction over £4 per ton, while a price list of special mixtures recently sent to us, offers Wheat manure at £8, Barley manure £11, and what is termed corn manure at £8. We might with advantage continue the comparison as to the quantity recommended per acre by the dealers and that which we advise.

Several farrows of pigs have come during this cold weather, but serious losses have been avoided by keeping sows and pigs closely shut up in warm quarters. These pigs should prove more profitable than those which we have sold recently, for even pigs have fallen off in price of late. Small porkers answer best, and we really do not see how we can better turn large fat hogs to account than turning them into bacon and lard. Certainly if returns of the importations of these articles of commerce are to be trusted there ought to be a fair margin of profit upon them. We have just purchased some capital young sows, a cross-breed between a Suffolk sow and Berkshire boar. They are compact handsome animals, admirably adapted for breeding good chubby porkers of the sort so much in favour in the London markets. Pure-bred Berkshires answer well for such a purpose, only they do not yield so abundantly as a cross-bred animal. Cross-breeding in this, as in most other cases, proving to be more profitable than pure in-and-in breeding.

HOGG AND WOOD'S SEED REPORT FOR 1888.

In submitting our annual report on the probable supplies of farm seeds for 1888 we have great pleasure in saying that there is the prospect of all sorts being abundant and low in price, with, perhaps, the one exception of Italian Rye Grass seed. Of Clovers, Rye Grasses, and Permanent pasture seeds we have already secured good supplies of excellent quality, and these have been selected after having been tested by us to grow well, so that every confidence may be placed in them.

English and Welsh Red, and Cowgrass, or Perennial Red Clover.—A fair yield is reported, at prices similar to the moderate rates current in 1887. The Hardy Welsh Red is in good supply, and we have secured some choice clean seed of the true sort.

Foreign Red Clover.—There has been a large crop on the continent of Europe, and an average crop in America. The seed is well matured, and prices moderate.

White Clover.—In England and abroad the yield is large, and prices lower than for some years past. Fine, clean, bold seed of English growth commands good prices.

Alsyke Clover.—A large crop in most of the producing countries is reported, and rates are low. There are some strong, clean English seeds at very moderate prices.

Trefoil or Yellow Clover.—The crop in England has been a medium one, and on the Continent the yield is reported small. Prices moderate.

Perennial and Italian Rye Grass.—Of Perennial the crop is smaller than for some years past, and the quality is remarkably fine. Prices similar to those of 1887. Anything under 22 lbs. per bushel is very foul, and we recommend the heavier weights as best value. The Italian has proved a short crop, but the crop is exceptionally fine. Prices are higher than those current last year.

Timothy, Cocksfoot, and other Natural Grasses are in fair supply, and, with one or two exceptions, at prices similar to those of the past season. Cocksfoot, Timothy, and Meadow Fescue are in increased demand for two and three years' pasture, along with the usual mixture.

Tares, Large Scotch and Foreign.—There is an abundant crop of excellent quality, and rates are lower than in 1887.

Turnips and Mangolds.—The last crop was a fair one of nearly all sorts; but the yellow varieties are in short supply, and rates will be somewhat higher than last season's.

Lawe's Manures.—These are again reduced in price, whilst the quality and condition are up to the usual high standard of excellence.—Hogg & Wood, *Coldstream*.

OUR LETTER BOX.

Potash in Manures (*K. J. A.*).—Sulphate of potash will not answer so well as muriate of potash in the mixtures of chemical manures, simply because it contains less potash. In pure sulphate of potash the per-centage of potassium is 44·8; in pure muriate the per-centage is 52·3. The comparative value of the two can be estimated in the ratio 52·3 to 44·8, or for general purposes it may be stated that muriate contains nearly one-fifth more potassium than the sulphate, if each sample shows the same degree of purity. It must not be forgotten, however, that the per-centage of purity varies. The literal meaning of the term sulphate, a salt of sulphuric acid; and of muriate, a salt of muriatic acid; a chloride might be taken as affording some indication of relative value, since it was proved to demonstration that all soil contains sufficient sulphur for plant requirements. Gladly do we answer such questions, affording as they do proof of thoroughness and an intelligent interest in a matter of such vital importance to all tillers of the soil.

Field Fencing (*W. R. R.*).—The fencing we figured answers well both for cattle and sheep, and is very durable, a considerable length of it which we put up seventeen years ago being still intact. As you now state you have a supply of railway sleepers at hand which you can turn to account as supports for strained wire, by all means use them, as such a contrivance may answer your purpose, but if the old sleepers are of soft pine wood their duration as fence posts even when tarred will be brief. The description, price, and figure of fencing we gave should prove useful to you even if wanted only for comparison. It so happens that our experience of fencing is a wide one embracing most kinds of wood and iron, and the teaching of such experience is that a mere makeshift may prove a costly affair in the end. We may add that it was because we have experienced the vexation of having a very similar fence of strained wire tumble down from the speedy decay of the supports that we offered a word of caution. If you do use the sleepers we recommend you to have a stout iron straining post at each angle; they are to be had at your post town very cheap, as we know some were purchased there a few months ago.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE. 1888. February.	9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of soil at 1 foot.	In the Day. Shade Temperature. Max.	In the Day. Shade Temperature. Min.	In the Day. Radiation Temperature. In sun.	In the Day. Radiation Temperature. On grass	Rain
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 19	29.473	30.3	30.5	N.E.	36.0	37.0	28.0	67.9	27.3	0.041
Monday..... 20	29.661	30.3	29.1	N.E.	36.2	39.0	29.3	75.7	28.2	—
Tuesday 21	29.776	34.3	32.7	N.E.	36.1	37.5	30.3	49.9	29.3	—
Wednesday.. 22	29.832	29.4	28.3	E.	36.0	31.4	29.2	36.3	28.4	—
Thursday.... 23	29.988	27.3	26.9	N.E.	35.7	29.8	26.7	36.5	26.5	0.013
Friday 24	30.004	28.6	26.8	N.E.	35.3	30.6	26.2	69.0	26.7	0.032
Saturday 25	29.945	31.4	30.6	N.	35.1	37.8	20.3	67.2	17.1	—
	29.811	30.4	29.3		35.8	34.7	27.2	57.5	26.3	0.085

REMARKS.

19th.—A little sunshine, but generally cloudy, with frequent slight showers of snow and sleet.

20th.—Dull, with frequent slight snow till 10 A.M., then fine and bright till 3.30 P.M.; cloudy afterwards, and N.E. gale at night.

21st.—Fine and generally bright morning, cloudy afternoon; high wind from N.E.

22nd.—Cloudy and cold.

23rd.—Sleet from 8.30 to 9.30 A.M., whitening the ground; dull cold day.

24th.—Snow from 8 to 8.30 A.M., fine morning with a good deal of sunshine; cloudy with a little snow for an hour or two at midday, then bright again.

25th.—Snow till 10 A.M., covering the ground to the depth of an inch, then generally fine and frequently bright.

A very cold week—the coldest this year. Mean temperature 31°, and frequent but slightf alls of snow.—G. J. SYMONS.

BOUVARDIAS.

FROM time to time the origin and progress of the most popular classes of plants have been traced in these pages, but little of this character has been devoted to the Bouvardias, though they have been treated very fully from a cultural point of view. The development of the valuable qualities of these plants has taken place within such recent times that many can remember when they were comparatively unknown, or the varieties so few that they received very little attention. Forty years ago the genus was represented in some gardens by a single species, and for long after that few additions were made; in fact it is only within the past twenty years that they have assumed a place of importance in collections of plants. Now their value is widely known, not only for culture in pots as decorative plants, but also for affording bountiful supplies of flowers, the double white variety especially having become a great favourite with bouquetists. In the United States of North America also Bouvardias are extremely popular, and the florists, who seem to be able to command such substantial sums for their productions, often secure during the winter months at least four times the prices obtained here, both for flowers and plants. On the Continent, particularly in France, considerable attention has been paid to the improvement of the varieties within the last two or three years, and several novelties have already found their way to this country that are likely to be followed by many others.

In glancing through the history of cultivated Bouvardias we must go back to the closing decade of the eighteenth century, when what are now generally termed "softwooded" plants were by no means numerous in British gardens. About 1791 a Mexican plant was introduced to Madrid which was described by several botanists both as an Ixora and a Houstonia. Three years later Sir Joseph Banks, to whom we are indebted for so many good things, introduced the same plant to this country, and further examination enabled the authorities to determine that it was sufficiently distinct from the genera named to merit recognition as a representative of a new genus. Accordingly the elegant title Bouvardia was conferred upon it in honour of Dr. Charles Bouvard of Paris, and the specific name triphylla in reference to the arrangement of the leaves in threes, completed the designation of the first cultivated member of this now large and important family. Its bright red tubular flowers borne in clusters at the tips of the branchlets soon obtained it many admirers, and as it was found to be easily increased by root and stem cuttings, it extended rapidly when the nurserymen took it in hand. At one time not very long since few gardens would be found without the old B. triphylla in some of its houses, but now it is seldom seen, except where curiosities are treasured, for though it is by no means wanting in floral attractions, it is far surpassed by the more recent productions of the same family. It is rather strange that although several varieties were obtained early in this century, one of which (pubescens) was afterwards separated as a new species (B. Jacquini) by some writers, yet neither the type nor the varieties have contributed to the present race of Bouvardias either in sports or seedings, and this is more strange because subsequent introductions have been so extremely variable. One fact must, however, be mentioned in connection with B. triphylla—namely, that it is the only member of the genus for which any medicinal value has been claimed, though included in the strongly characterised Cinchona family. In 1874 Professor Maisch brought before the Philadelphia College of Pharmacy a reputed remedy for hydrophobia named Trompatilla, which was prepared in Mexico from the stems of B. triphylla; but though some notice was taken of it at the time little has been heard of it since, and probably, like many of our old herbalists' preparations, its properties were more imaginary than real.

Several other species were introduced from Mexico and South America in the first half of the present century, and with two of them we are especially concerned in referring to the history of modern Bouvardias. These are B. longiflora, introduced from Mexico in 1827, and B. leiantha, from Guatemala, which flowered at Mr. Salter's Hammersmith Nursery in 1850, and was probably introduced a few years previously. The first named has long and handsome pure white flowers, and the second has much smaller reddish crimson flowers, a bright and rather pleasing shade. Commencing with these Mr. Parsons of Brighton, in 1855, obtained a cross, B. longiflora being the seed parent, and from the seedlings raised, four—namely, Hogarth, Laura, Rosalinda, and Oriana—were sent out a year or two afterwards. The production of the variety Hogarth, which has rich red flowers, was an important step, and in it and its descendants we have some of the most useful plants of the present time. It has produced quite a family of sports very distinct in characters and extremely interesting, as showing the variability of some plants when once their characters have been disturbed, without subsequent cross-fertilisation. Several years elapsed after the four already mentioned appeared in gardens before anything farther was done, but in 1869 a beautiful scarlet sport from Hogarth, under the name of B. elegans, was imported from America, and was soon after utilised in crossing with others.

A second remarkable sport was also produced from Hogarth in America—namely, Vreelandi or Davisoni, with white or faintly tinted flowers, arrived here in 1871, and owing to its good habit and floriferousness has become a general favourite. A delicately coloured sport from Vreelandi, named Maiden's Blush, was sent out by an English nurseryman in 1874, and is still prized in many collections, but the most important of all was the double white Alfred Neuner, a sport from Vreelandi, that was obtained in America in 1880, and certificated at New York of that year. Early next year Messrs. J. Carter & Co. presented it to the British horticulturists, and it rapidly extended both in trade and private collections, Mr. W. Bull obtaining a first-class certificate for it from the Royal Horticultural Society on August 9th, 1881. This has become one of the best for bouquets and buttonholes, as the flowers stand much longer than the single varieties, and are usually very symmetrical in form. A double rose-coloured sport from Alfred Neuner was secured in the United States in 1882, but a similar sport seems to have been obtained by several persons; amongst others Mr. David Allen, gardener at Oakley, Boston, fixed one which was named after his employer, Miss Mary Pratt. Another was also noticed at Louisville, and one of these appeared shortly afterwards as President Garfield. This has not at present proved so useful as the double white, as it is more variable and does not preserve its characters so well.

Reverting to B. elegans, one of the earlier Hogarth sports, a few of the crosses between this and others may be noted. A fine white-flowered species, B. jasminiflora, was introduced from South America in 1869, and proved a decided acquisition. The first cross was effected between B. elegans and B. jasminiflora, and the results in 1872 were longiflora flammea, for which Messrs. Henderson were awarded a certificate by the Royal Horticultural Society on May 1st; Bridal Wreath and alba odorata, followed in the succeeding year by candidissima, umbellata alba, and umbellata carnea, all of which we believe originated in Messrs. Henderson's Wellington nursery. A yellow-flowered species, introduced by M. Louis Van Houtte in 1846, was also crossed with B. elegans, and in 1874 bicolor was sent out as a distinct variety, that now, however, is rarely seen. A sport

from B. elegans, which received the name of Priory Beauty, has rosy mauve flowers, and it was certificated at Wimbledon in 1881 when exhibited by Mr. Law. It has since become a favourite in numerous collections. One other variety of the Hogarth family has yet to be noted—namely, Queen of Roses, that resulted from a cross between B. Hogarth and B. longiflora, which came into public notice in 1869, and has been greatly appreciated ever since for its pleasing rose tint and fragrance.

Crosses between other species or varieties have not been very numerous, but some have been made that have added materially to our collections. The principal was a cross between B. jasminiflora and B. Humboldti, which yielded in 1871 B. Humboldti corymbiflora with large white trusses of flowers, and B jasminiflora longipetala, besides several others that were not named. From B. jasminiflora crossed with B. flava in 1875 the yellowish but not beautiful B. jasminiflorum flavescens was raised by M. V. Lemoine, but a really good yellow variety has yet to be secured.

It is rather remarkable that only four Bouvardias have been certificated by the Royal Horticultural Society—namely, B. longiflora flammea and Alfred Neuner, already noted, with Dazzler, shown by Mr. Balchin of Brighton, November 16th, 1880, and President Cleveland exhibited by Messrs. Veitch & Sons, December 13th, 1887. The last named is of American origin, and one of the brightest scarlet-coloured Bouvardias in cultivation ; it is probably one of the B. elegans or Hogarth family, but whether a seedling or a sport does not appear. In the last year or two several double scarlet varieties have been introduced, mostly from France, where M. Lemoine has given them some attention. Sang Lorraine, Triomphe de Nancy, and V. Lemoine are the best of these, and they have been well grown by Messrs. Cannell & Sons at Swanley.—L. C.

IS CHISWICK TO GO?

Under this heading we published articles that have received a large share of attention not only from persons identified with the reorganisation of the Royal Horticultural Society, but from others who are interested in its welfare. Taking our stand on the broad ground that as the strength of nations and the solvency of individuals depend on sound finance, corporate bodies cannot, of necessity, form an exception to the rule ; therefore we were anxious that the actual financial position of the Society should be clearly understood by all its supporters, and especially by the members of the Council-moving Committee who have taken its destiny into their keeping.

We have had the most conclusive proof of the necessity for presenting the resources of the Society in their true light ; and in only one particular has it been possible to question the accuracy of the estimate that was presented in these columns a fortnight ago. A friendly contemporary, while it has described the finances as "deplorable," very properly suggests the unadvisability of representing them as worse than they are. We have yet to learn that the estimated income for the year is too low, and the liabilities too high. Accepting the correction that has been tendered in respect to the Assistant Secretary's salary, and reducing the total by £175, there is a further liability that was not indicated—namely, the cost of transfer and furnishing and fitting up the new rooms. This is a necessary outlay and cannot under the circumstances be insignificant. Doubtless the salary was included in the financial statement, but at the same time it is well known the amount was not paid out of the Society's exchequer, but by good and generous friends.

We wish it were otherwise, but cannot arrive at any other conclusion than that the disbursements for the year will exceed the income by £2000. It is most important that that contingency be recognised, and also that no expenses be incurred except what are clearly foreseen will be remunerative. We know that an estimate was arrived at showing an income of £3800, instead of £2000, by simply regarding the lapsed £600 of South Kensington expenses as an asset, and including the £1200 promised for the special fund ; but that position is not sustainable, and therein was the danger, obscured, but not the less existent, of Chiswick having first to be neglected, then abandoned, in which case we are not alone in the belief that the Royal Horticultural Society would melt away.

It is pleasant to learn that Chiswick is not only to be preserved but to have its resources developed on the lines we have suggested as soon as attention can be directed to it, and when means are forthcoming ; or in other words the famous old garden has not to go, but only to wait. It is in our opinion the neglect of Chiswick that has more than anything else alienated the sympathies of provincial horticulturists and gardeners from the Society ; and we have a strong conviction that if sound and thorough work was done there and the results published that a greater accession of supporters would be forthcoming than could be obtained in any other way. We do not ignore the question of "City rooms," nor underrate their importance ; but, on the contrary, should regard them as a valuable adjunct to Chiswick and subservient to it, not Chiswick subservient to them, as for some time to come they cannot be otherwise than of a temporary nature. They are obtained, and a hall too, that will answer well its purpose during the summer months for exhibitions. We very earnestly hope these will answer the purpose too.

The policy of the Committee appears to be a policy of showing. The programme will have to be framed with great care, as no doubt it will be, and carried out on different lines than heretofore, to command support. It must be conceded that the shows of the past have been a source of weakness rather than of strength to the Society. Every so-called "exhibition" in connection with the meetings during the past year has entailed loss, and not brought gain, either in the form of an increase of Fellows or in receipts from visitors. Even when all the prize money was provided by seedsmen the Society has lost considerably by the venture. Take the display of vegetables in October, admittedly one of the finest shows of the kind ever seen, yet what was the result? Scarcely any visitors, and the Society in the cost of preparations, including labour, clerical and otherwise, was a loser to the amount of at least 200 per cent., and probably as much more by the joint arrangement. Is not that the road to ruin ?

The lessons of the past cannot be forgotten, nor can methods that have failed be safely followed. A departure from old courses seems to be imperative. No doubt a well-thought-out scheme will be promulgated, and everything done that can be done to make it successful. We will join in any prudent course that can be devised in the interests of the Society, and should regret exceedingly to have to record the failure of the endeavours that are being strenuously made to strengthen it and enable it to do its legitimate work. To speak paradoxically, on the non-responsible Committee rests the responsibility, and nothing but success can justify its existence. The difficulties to be encountered are great, but this only means that the greater will be the honour due to those who overcome them.

FRUIT IN NEW ZEALAND.

An error appears to have crept into the fifth edition of the "Fruit Manual." I feel sure the author will only need to be made acquainted with the fact to rectify the same at the first opportunity. On page 181 it is stated "Prince Bismarck Apple was raised in Canterbury Province, N. Z." It was raised near Ballarat, Australia, and the first six plants were sent to a friend of mine, Mr. Bull, nurseryman, Gisborne, Poverty Bay, New Zealand, who told me the full history, but I have forgotten the raiser's name. I am well acquainted with the two McIndoe Brothers in Auckland, one of whom sent plants to their brother in England after it was disseminated locally from most of the New Zealand nurseries. There is another, and many think a better, Apple, named "Ballarat Seedling," by the same raiser. We have a New Zealand raised variety named "Lord Wolseley" that is equal to Winter Majetin in its Aphis lanigera-resisting power. It is a most handsome variety and a long keeper. I shall have great pleasure in sending you some dormant buds per post if you would care to have them. Carefully cut off shallow and budded without removing any of the eye underneath the bud, they push at once if put on some good free stocks. I get scions from England, France, and America this way and we are very successful with them. We grow Apples to a very large size in this North Island of New Zealand. Warner's King has been grown to 28½ ozs., 27 ozs., and 24 ozs. by different growers. Many of the varieties of Pears are very superior here in flavour compared to the midland counties of England, but sometimes we get a second crop of flowers and fruit. I have eaten Williams' Bon Chrêtien second crop equal in flavour to the first, though not in size. I have seen Passe Colmar with three crops of fruit at one time, though this is rare. Plums also crop well in this country. I forward our catalogue that you may see the varieties of fruit we grow.—Joseph Mayo, *Drury, Auckland, N.Z.*

GLADIOLUS NOTES.

Last year I reverted to a very old method of starting the corms before planting them in the open. So well was I satisfied with the results that I have already placed a few hundreds in boxes to start slowly in a cool house. The reason for so starting the plants

into growth may not be apparent to the less experienced grower without some explanation. The explanation is this. Our summers are too short for many varieties to properly mature their flower spikes, and even in the case of some which do this the corm which is to continue the plant's existence and to flower the succeeding year is not sufficiently developed before winter. For many years I lifted plants and allowed them to finish growth under glass, but this practice is not so commendable as that of extending the length of the season of growth from what may be called the "bud" end of the plant. The rationale of this system is very much the same as that of sprouting Potatoes before planting, and indeed in many respects the Gladiolus appreciates the same treatment as the Potato. I am sprouting my Gladiolus like the Potatoes, being alongside them. A little leaf soil (sifted) is placed in the bottom of cutting boxes, and the corms are laid somewhat closely together on the top of the soil, a covering of moss helping to start the growths in an even manner. I have cut the corms for the past few years, and though not a necessary proceeding it enables us to produce a given number of spikes from one corm with absolute precision. A friend who followed this practice complained of the number which failed to grow, but I have not the slightest doubt that there had been a failure on the part of the grower, just as it so often happens that Kidney Potatoes are never seen after they are put in the ground when dormant. If corms with imperfectly started buds are cut and placed into cold soil it is no wonder that they fail to grow. It must be borne in mind that in some seasons on account of a want of heat the corms do not ripen sufficiently for the full development of more than one bud.

It must be remembered that a Gladiolus is, after all, simply a corm, and in trying to increase it by cutting we are limited by the condition of its rootstock, for if in endeavouring to make every prominent bud into a detached plant we cut outside the circle of latent roots we cannot make that bud grow into a plant. Many of the corms that have lately passed through my hands have shown four and five good buds, but in no case have I been able to cut up into a greater number than three pieces, because of the impossibility of securing roots along with a greater number of buds. Lemoine's hybrids require exactly the same treatment, and the same care in cutting the corms. Last season several spikes were so late as to be spoilt by cold and wet. This year I hope by starting them to have them much earlier. Moreover, this year I asked M. Lemoine to select me only those which he knew to be early, so that I hope to be on the safe side. The earlier varieties of the Gandavensis section do not require to be started, and of course those who are far enough south will hesitate to adopt a system which in their case may not be necessary at all.

A few years ago I began to plant much shallower than growers recommend. My reason for doing so was to secure more heat to the corms in autumn in order to their more thorough maturation. I confess I tried this plan with some hesitation, but the results have so far justified this innovation. Last autumn some of the stronger growers—such as Mabel, Léandre, Teresita, Titania, &c.—ran up to from 6 to 7 feet, and in one case as many as seventy-eight flowers were produced on one growth. Moreover, many of the corms measure 9 to 10 inches in circumference, and a few from 10 to 11, while dozens of them will throw three and four growths from one corm, so that in our case there cannot be much wrong with this system.

Another cultural point worth directing the attention of large growers to is the distance the corms should be planted apart. When clumps of one variety are planted, say of nine to a dozen together, the corms need not be farther than from 2 to 3 inches apart. When planted in lines or beds four single growths can be put into each foot run, and they will succeed just as well at this distance apart as when allowed more room. In order to get freely to the plants a distance of 18 inches between the rows is not too much to allow.

The soil should be thoroughly broken into small particles to a depth of from 18 inches to 2 feet. Last year I added a 9-inch dressing of prepared garden refuse to the Gladiolus quarter. I shall add quite as much this year, as it seems to suit them so well. Superphosphate of lime employed as a surface dressing three or four times in the course of the season, and watered-in, is of much advantage. A good guano is equally beneficial but more expensive, though in many cases it may be more easily obtained than the other.—B.

NOTES ON GRAPES.

SIZE AND QUALITY.

Under the above heading there appeared in the Journal for the 26th of January last an ably written article from the pen of Mr. David Thomson. I agree that those gardeners who grow for market are bound to produce what is most in demand, whether it be coarse or otherwise, therefore my remarks shall be confined to garden produce which is cultivated specially for home consumption. With regard to size and quality in hothouse fruits, Mr. Thomson will, I doubt not, admit that both may be obtained together in the best kinds and varieties of fruits. I take it that anyone knowing anything about Grapes would look upon the production of well-proportioned and finely finished bunches from 3 lbs. to 7 lbs. each as bearing evidence of high cultural skill, and my experience leads me to say that nineteen out of every twenty guests would prefer the 7 lb. bunch to the 3 lb. bunch being seen on the dinner table. Size in this case would not necessarily be secured at the expense of quality pointed out by a correspondent at page 82. However, I do not advocate growing all large bunches of Grapes. On the contrary, I should say from one to three dozen such bunches for special occasions would be ample, as there can be no doubt in the minds of Grape-growers about bunches of every variety of Grape, ranging from 1½ lb. to 3 lbs. each, being the most useful, and at the same time the most economical size bunch to grow.

VARIETIES OF GRAPES.

With regard to varieties I daresay all practical Grape-growers for home consumption would, if they were confined to two varieties, grow Black Hamburgh and Muscat of Alexandria in preference to any others. At the same time I fail to see that anything is lost by including a rod each of other varieties in the second and third Hamburgh houses. But Black Hamburgh, Muscat of Alexandria, Madresfield Court, Buckland Sweetwater (which is a grand Grape when well done), and Foster's Seedling, cannot be had all the year through, hence it is that the thicker-skinned and less highly flavoured varieties are cultivated to continue the supply of Grapes during the winter and early spring months. With regard to late or long-keeping Grapes, I look upon the old and much-abused Syrian (which is nearly identical with Trebbiano), and Mrs. Pearson, as being two good keeping white varieties, the berries of both being juicy and very refreshing when well ripened. Of blacks, we depend mostly upon Lady Downe's, Mrs. Pince's Black Muscat, and Gros Guillaume. The latter is a much-abused Grape by those who have never succeeded in growing it as it should be, and also by those who have not even attempted to grow it, but who, nevertheless, condemn it upon hearsay gossip. Here the Gros Guillaume is much valued as a late Grape. The Vines are not given any more space to grow in than that accorded to other varieties.

PRUNING FOR LARGE BUNCHES.

Like the Syrian, Gros Guillaume has this advantage over all other late Grapes—namely, that either a greater number of medium-sized bunches, or a less number of abnormally large ones, according to the desire of the cultivator, may be taken off the Vine. A crop may also be had of both large and small bunches by pruning at the beginning of the year two or more shoots back to a plump bud, irrespective of its distance on the previous year's wood from the main stem, and cutting all the other shoots hard back to one eye from their bases. As an instance of this system of pruning Vines, I may be allowed to state that this year I cut two bunches of Gros Guillaume weighing 10 lbs. and 12 lbs. respectively, and five bunches ranging from 2½ lbs. to 4 lbs. each off the same Vine. I never reduce the shoulders of any of the bunches of this Grape at thinning time as was suggested recently by Mr. William Iggulden, who, I believe, grows the Grape creditably at Marston. I have had small bunches of Gros Guillaume keep plump up to the end of March, the berries being juicy and full of flavour. Gros Guillaume requires a long season to ripen it well. It does very well here in the Muscat house, which is started the middle of January, and also in two other houses of mixed late Grapes which are started a month later.

OTHER LATE GRAPES.

Alnwick Seedling and Gros Maroc I value very highly. The flavour of the latter is greatly improved by being grafted on the Black Hamburgh stock, by which union the flavour of all late varieties of Grapes would be improved. Gros Colman, as Mr. Thomson pointed out, is a noble-looking Grape when well grown, the berries being of great size, fleshy, and of pleasant flavour if not eaten till January or February. However, as showing how Gros Colman is appreciated here, I may mention that during the week ending February 25th I have, by way of a change from medium-sized Gros Guillaume and Mrs. Pince, been sending to the Castle for dessert Mrs. Pince and Gros Colman, with the result that the former is eaten and the Gros Colman left untouched. The bunches are suspended from a figure, one on either side, stood on the centre of the dinner table, and that the bunch of Gros Colman placed thereon a week since is still plump and fresh. The supply of Mrs. Pince is renewed once and sometimes twice a day, the bunches

ranging from 2 lbs. to 4 lbs. each. I admit it is hardly fair to thus test any late Grape with Mrs. Pince.

TESTING THE QUALITY OF GRAPES.

Where several long-keeping varieties of Grapes are grown for home consumption it is a good plan, in order to ascertain which of the several varieties (Mrs. Pince excluded) find most favour, to place two together on the table of persons who have been accustomed to the flavour of Grapes from their infancy, and who, therefore, may be considered competent judges of the quality of the Grapes set before them. Lady Downe's should be the standard variety, as being the generally acknowledged best late Grape in cultivation; therefore, the contest might be opened by sending to table Lady Downe's and Gros Maroc three or four days following, renewing supplies of the variety finding most favour daily during that period. Assuming Lady Downe's to be that variety, Gros Guillaume might take the place of Gros Maroc, and so on until all the varieties had been tested by the standard thus set up. On the other hand, should preference in the first instance be given to the Gros Maroc, Lady Downe's would be succeeded by Gros Guillaume or some other variety at the end of the specified time. In this way a pretty correct decision of the relative qualities of late Grapes by competent and impartial judges might be arrived at. In reference to societies which only provide one class for black Grapes at shows held in August, as is the case at Southampton, good judges would, I have no doubt, give the prizes to moderately good and fairly well finished bunches of Black Hamburgh in preference to good examples of Alicante, Gros Colman, Gros Maroc, or Lady Downe's. They would also give the prize to good examples of any of the last-named four varieties in preference to "red" Hamburghs, which only afford evidence of bad cultivation.

BOTTLED GRAPES.

I quite agree with what Mr. Thomson says with regard to the effect which the system of cutting and bottling late Grapes has on their flavour—namely, that the latter is considerably impaired by reason of the water which the Grapes imbibe from the bottles. There is no doubt about Grapes keeping better and being of better flavour by being allowed to hang on the rods till February in properly constructed houses, and in which no plants requiring or giving off moisture are wintered. This would be better for the Grapes; but would not the fact of the bunches being left so long on the Vines permanently and injuriously affect them, seeing that they would have no interval of rest between cutting the Grapes and starting the Vines, as I maintain all late Vines should be started by the middle of February? Moreover, the Vines, borders, and interior of the vineries need attention in the meantime. No. Where a supply of Grapes is required all the year through, as is the case here, and in many other places besides, the bottling system must be had recourse to notwithstanding the extent to which Grapes lose flavour in consequence thereof. —H. W. Ward.

SIX GOOD CAULIFLOWERS.

Encouraged by many private letters I have received confirming my recommendation of "Six Good Peas," I have selected Cauliflower for my third article; and although probably one or two varieties may be sufficient for amateurs, large garden owners are obliged to have the earliest and latest varieties, as well as others that will give a succession throughout the whole season. Cauliflowers are not so numerous as some other vegetables, yet there are about a dozen and a half affording ample room for selection. The Cauliflower season may be said to begin in May and end in November, and the earliest of all is

Veitch's Extra Early Forcing.—This is a most desirable variety. If sown in a little heat in February, transplanted in March, and planted out in April, it will head in May, and a Cauliflower that gains maturity in a little more than three months after sowing merits the name of "early." It is very compact in growth, may be planted 18 inches apart each way, and the heads produced, from 3 to 4 inches in diameter, are as white as snow, and exceedingly delicate in flavour. It heads a fortnight before any other variety I have seen. We have ceased to sow Cauliflowers in the autumn, as this variety, when sown about the present time, will head before any autumn-sown plants, and while many of these become very leggy, or "bolt," the spring-sown ones invariably grow compact and do well generally.

Veitch's Pearl.—A fine second early variety. It grows taller, more bushy, and produces larger heads than the preceding, but in these respects it might be described as of medium development, and it is a useful Cauliflower. The heads are exceedingly firm, very compact, and pure white. It is a splendid Cauliflower for the table, and if sent to market in June and early in July it would be sure to meet with a ready sale, and at the top price.

Webb's Kinver Monarch.—A new Cauliflower, and as a main summer crop sort it is in my opinion unique. Like all well selected vegetables it does not produce a quantity of superfluous leaves, but grows most compactly and developes fine heads with certainty. We sometimes see Cauliflowers exhibited at shows in June, but it is towards the end of July and throughout August that they are shown in the greatest profusion, and as an exhibition sort at such times the Kinver Monarch is difficult to surpass. If sown in the open ground in March it will head freely in July, and a succession can be had for a long time.

Sutton's King of Cauliflowers.—A well known variety, and especially for late autumn use, its merits being included amongst a good half-dozen everywhere. It is a strong healthy grower, and although it does not head so quickly as some of the preceding it comes in well in good time, and anyone going through a quarter of it a little while after the first were cut would be delighted with the many fine heads they would find. The heads are well protected by leaves, and this is why I like it so much for autumn use.

Carter's Mont Blanc.—This has the merit of being distinct. The plants are strikingly compact in habit, and the heads are large. It is a summer sort, and those who grow half a dozen varieties of Cauliflower and do not include this may rest assured that they are without one good one at least. Some Cauliflowers only succeed in certain soils, but I have noticed that this one does well in all, and its good constitution and robust style of growth indicates it as a variety that will prove remunerative.

Veitch's Autumn Giant.—It speaks well for the class of Cauliflower Messrs. Veitch deal in when three out of my good half-dozen are of their introduction, but they all merit note, and this one as much, or perhaps more, than any of them. It is as well known as any Cauliflower in existence. I have nothing new to say of it, but I could not help including it amongst the six, and it would have had a place in a less number. It is not, however, an early Cauliflower, and it can hardly be called a summer variety, as it must be sown early to head in August, but for September, October, and November it outdistances all rivals.—J. Muir.

PEACH TREES CASTING THEIR BUDS.

The vexed question of Peach trees casting their buds is ever reappearing amongst us, and although various opinions are from time to time advanced as to the cause of the evil, no effectual means of preventing it have been found, as it is still very prevalent. It is generally attributed to dryness of the borders and unripe wood, but anyone who has had Peach trees under his charge in different localities will have found bud-casting take place even when the borders have received ample supplies of water at all seasons, and also when the nature of the wood as to ripeness has left nothing to be desired.

Taking unripe wood first, "J. H. W." (page 169) says "unripe wood is generally the cause of buds falling." Now, this is exactly the reverse of my experience and observations, for whatever other evils are due to unripe wood, and they are many, I have never found it conducive to buds falling. The wood of outside trees is often in an unripe state at the commencement of winter, and yet, as everyone is aware, with these the evil very rarely if ever occurs. Again, it is much less frequent in late houses than in early ones. The latest Peach house here is in a very unfavourable position for the trees ripening their wood, being shaded by a high plantation most of the afternoon, consequently the wood is weaker and greener in colour than is the case in the other houses, but the trees never cast their buds; whilst in the early house, where the wood is stout, hard, and red coloured, some of the buds fall every year, although not enough to cause anxiety, yet the evil is present. Judging from these facts, unripe wood would not appear to be the cause.

Dryness of the borders no doubt contributes greatly to increase the disposition of trees to cast their buds; but, on the other hand, strict attention to watering will not always prove a sure preventive. I have had charge of Peach houses from which all the roof lights have been removed directly after the last fruits were gathered, and have only been replaced in time to prepare the house for forcing, yet, notwithstanding the most cautious and gentle forcing, they would cast their buds in showers; and often I have entertained the gravest fears that enough would not remain to furnish a crop of fruit. What, then, could have been the cause of the evil in this instance? It was neither unripe wood nor dryness at the roots for these trees I am confident never suffered in that respect.

The origin of the evil, I am of opinion, is to be found in forcing—not alone the early forcing of the trees into growth, but the forcing to rest at a time of the year when, under natural conditions, they would be full of life and vigour. The Peach appears to require the warm sunshine and cool nights of autumn to mature

and perfect its buds for another season, and when forced to perform these functions under the burning heat of the summer sun the work is, as it were, overdone—in a word, a large proportion of the buds never are perfected, and soon die, although they remain attached to the trees until the rising sap pushes them off. I do not believe we can insure complete immunity from bud-falling in early houses which are forced every year, but by carrying out a judicious system of cultivation it may be reduced to harmless limits. One of the best means to adopt as a preventive is frequent lifting and relaying the roots, wholly or in part supplying them with fresh soil, and keeping them near to the surface of the border. Over-cropping should not be indulged in, and insects allowed no quarter. There is no excuse for allowing the foliage to be devoured by red spider, for the syringe if properly used is a most effectual check to this pest. Lastly, give plenty of water at the roots and over the foliage of the trees. Make sure the borders are thoroughly soaked, and give the foliage an evening bath daily.—A. BARKER, *Hindlip*.

RECORDS OF EXPERIENCE.

WINTER ACONITE (ERANTHIS HYEMALIS).

THOUGH growing anywhere and anyhow, it is only in open spaces in shrubland or woodland arrangements that the wealth of bright yellow flowers and deeply cut leafage of this plant are seen to advantage. It seems to like a cool soil—a good loam over clay, not disturbing it, but give it a chance to spread. It is the first flower of consequence to the bee-keeper, as it affords the first gathering of pollen and nectar, especially to the black bees.

HELLEBORES.

Of other flowers Helleborus niger altifolius (maximus) has been grand with flowers 4 to 5 inches across, one to three on a stalk, rose tinted outside and in bud, leaves large, green, their stalks mottled with purple. We have it on a narrow outside south-west border of a conservatory along with H. atrorubens, which bears numerous reddish-purple flowers. H. niger is poor beside H. niger angustifolius (Scotch variety), which has its flowers tinged with rose externally, white inside, and yet the most floriferous and finest of the Christmas Roses, the plant being dwarf and compact. There is a variety—viz., H. niger angustifolius (Manchester variety) with large pure white flowers, freely produced, and very fine. Hellebores like a cool soil, good loam over clay, and a protective and enriching mulch of leaf soil or partially decayed manure. They are all the better for shelter, flowering best when covered with handlights or frames. Their chief requirement is to be left alone—*i.e.*, plant properly, and let them grow into masses, when they charm everybody.

CHIMONANTHUS FRAGRANS.

Chimonanthus fragrans is a bush with us about 6 feet high, and rather more through at the base. It is at the south-west end of a vinery, and has been flowering since the end of January, and will probably last, as it did last year, until April. The early flowers are borne on the short stubby shoots in the interior of the bush, the late ones proceeding from the stronger growths of last year. It needs to have a warm situation, either in front of a wall or building with a south to west aspect, or trained against walls or buildings with the aspect cited. In the north a wall is absolutely necessary. Close pruning is essential, so as to have the principal branches well furnished with young wood, as the flowers are produced on the previous year's growth in the axils of the leaves of the preceding year. Pruning should be done after flowering, cutting in close to the main branches all young shoots except the leading ones, which may be cut back half their length, more or less, so as to induce side shoots for furnishing the bushes against walls. Our bush merely has the oldest of the old wood thinned out, and any straggling or overgrown shoots shortened. The result is a good crop of wood, bearing flowers freely the following season. Where sweet scented flowers are in request in winter they are much appreciated. A few sprays with brighter flowers in vases afford the charm of delicious aromatic fragrance. It is generally considered to thrive best in deep rich sandy soil; but I have not succeeded with it in such unless the soil was firmed as for fruit trees, so as to induce sturdy, short-jointed, well ripened, floriferous wood. Our plant is in strong loam over clay, and a mulching of partially decayed leaves or spent hotbed in autumn is sufficient enrichment.

VIOLETS.

Violets in frames dispute with Chimonanthus fragrans the claim to acceptance as general favourites in winter. There is none to equal (and I have grown nearly, if not quite, all Viola odorata vars.) the Neapolitan varieties. Marie Louise, deep mauve, red streak, and white eye; De Parme, light mauve, with white eye; and Count Brazzi's White Neapolitan. Count Brazzi does not claim any credit for the last variety beyond making it known. That I had personally from him. I find these varieties have the best constitutions, give larger and finer blooms than any others, as well as more of them over a longer period, and with most scent. There is another characteristic in that they never vary, are always reliable, and yet there is an advance in Marie Louise (the true Marie Louise is light mauve or lavender, with a white eye, without any red streak) towards two flowers on a stem, which is more pronounced each year, though I have not as yet had two fully developed flowers on a stem. De Parme, on the other hand, is just the same as it was received from Florence in 1870. What I wish culturally to state is that Violets are most floriferous, have most substance, and most scent when grown in strong loam than in light. There is a sturdier more solidified growth, plumper crowns, and more flowers.

CELERY.

Celery last year had a trying time. It seems strange we should dig ditches to grow it in and yet omit to provide the water. In the fen districts the finest Celery in the world is grown; the black vegetable soil and the water enable the plants to luxuriate under a broiling sun in the dog days, whilst that in gardens relied most on the reservations of moisture in the manure, which in the quantity used never made the crop pay, except it be as preparatory of the ground for other crops, particularly Onions. I find there is more virtue in drenchings of liquid manure, say three or four during the hot weather in the early stages, than in great thicknesses of soapy manure. The slops of the house and laundry run alongside of the Celery trenches cause less stench than results from overflows in ditches, besides causing the Celery to shoot ahead. Another thing in making Celery trenches is digging-out the good soil—a capital thing, no doubt, to grow Lettuces on the ridges—leaving very little beyond the manure and the stubborn unameliorated soil for the Celery to grow in. Surely Celery likes good soil. There is no need to plant on the flat, but a moderate excavation, or if one is made enough good soil as well as manurial matter should be placed in the trenches to insure a full growth. The better plan would be to have the ground trenched; it sounds more like cultivating a ditch plant, and then the Celery would have a chance to root according to its own "sweet will." The best Celery I have seen and had was on deeply cultivated ground. It cannot be practised on all soils, as some are a mass of stubborn material beyond a few inches of ameliorated surface. In such it is a good plan to prepare the trenches some time before they are wanted, not less than 2 feet wide, removing some of the bad material and loosening that at the bottom. I prefer the waste of the potting bench, vegetable refuse, including weeds not of a rooted character, such as Couch, Bindweed, Plantain, Dandelion, &c., which have been sprinkled with a little salt, and charred or burnt clippings and prunings of hedges and trees and shrubs, altogether—the rooted weeds even burned on the fire of trimmings, &c.—incorporated and put in the trenches 4 to 6 inches thick, mixed with that depth of the soil. Then a similar thickness of fresh short manure is given, leaf soil, and good surface soil well mixed. Nothing further is needed but to wait for planting time, forking over the trenches every fortnight. Make the trenches as soon as time and ground admit after the seed is sown for the respective crops. There is another point—viz., I have dug the trenches with wall-like sides, also with a good slope. There is no comparison of the two. The slope shoots the water of any passing shower into the trench, also the liquid given: the Celery grows with a much sturdier base, and it is bulk as measured by stoutness rather than weight, resulting of length that is wanted. The Celery is useless unless solid and crisp, with a sweet nutty flavour; to obtain it rich sweet and firm material is necessary, along with plenty of light, so that the growth may be sturdy from first to last. Of white, Sandringham is good alike as an early or late variety. I had last year for the first time Veitch's Early Rose. It is a very good sort, and not given to bolt. Those two I recommend as early. For main crop I do not think more is to be desired than is found in Wright's Giant White and Major Clarke's Red. Ivery's Nonsuch Pink and Sulham Prize Pink, the one large and the other medium size, are excellent. For late use I have found Standard Bearer (red) and Sandringham first-rate: indeed, if I was restricted to two varieties, those would be honoured for their good and reliable qualities.—UTILITARIAN.

RECLAIMING SANDBANKS.

MR. MUIR'S excellent article on the above recalls to my memory a practice which has been adopted for many years (about fifty) on the coast of Sussex. Stretching from three to four miles from Rye Harbour are extensive banks of the finest sand, which are securely held together and form miniature hills by a Rush-like Grass provincially called "Bind-wheat." On inquiry at my only visit a few years since I was informed

that it was originally brought from Holland, where it is largely used for fixing the sand, but that it was a native of Italy and introduced by a local farmer whose interest lay in the extensive sheep runs across the marshes from Rye and Camber to Lydd and Romney. Its generic name I was at that time unable to ascertain. Neither can I find now in the "Cottage Gardeners' Dictionary" the name given by Mr. Muir, so that I am unable to fix it as the same Rush-like Grass used by him. Whatever the plant may be that is so plentifully growing near Rye, it is of inestimable benefit in collecting and preventing acres of land being buried and rendered useless in stormy periods. Perhaps some of your numerous readers can throw more light on the subject.—J. W. MOORMAN.

Notes & Gleanings

EVENTS OF THE WEEK.—The Royal Society has a meeting at 4.30 P.M. on Thursday, the 8th inst., the Quekett Microscopical Club at 8 P.M. on Friday, the 9th, and the Royal Botanic Society on Saturday, the 10th inst., at 3.45 P.M. The Fruit and Floral Committees of the Royal Horticultural Society will meet on Tuesday, March 13th, in the Conservatory at South Kensington.

—— ROYAL HORTICULTURAL SOCIETY.—A meeting of the Council was held on Tuesday, the 28th ult., at which power was given to the President, Sir Trevor Lawrence, Bart., M.P., to sign the agreement for the occupation of the Society's new premises, at 111, Victoria Street, S.W., for offices, &c.; and the Drill Hall of the London Scottish R.V., in James Street, Westminster, for exhibitions and shows; the Society to enter into possession on March 25th. Both premises are conveniently situated midway between Victoria and St. James's Park Stations on the Underground Railway. The Council also drew up and adopted a scheme for the admission of Fellows paying £1 1s. subscription, and determined to admit as Associates *bonâ fide* gardeners or employés at any nursery, market garden, or seed establishment, at a subscription of 10s. 6d. a year. The following Committees were appointed:—*Finance:* Baron Schröder, Messrs. T. B. Haywood, E. G. Loder, H. J. Veitch, with the President, Secretary (Rev. W. Wilks), and Treasurer (Mr. D. Morris). *Chiswick Gardens:* Colonel Beddome, Dr. Hogg, Mr. George Paul, Mr. Woodbridge, with the President, Secretary, and Treasurer. *For Revising the Bye Laws:* Messrs. T. B. Haywood, A. H. Smee, G. F. Wilson, with the President, Secretary, and Treasurer, coupled with a request that Messrs. Deal, Pearson, and Marshall, members of the Fellows' Committee, would be kind enough to confer with them. The Trustees of the Lindley Library had an interview with the Council, and it was determined to remove their library to the Society's new rooms, at 111, Victoria Street, Westminster.

—— THE above ought to have appeared in our last week's issue, but was not received till after we had gone to press.

—— A MEETING of the Council was held at South Kensington on Tuesday, March 6th, when the agreement as to the lease of the premises, 111, Victoria Street, Westminster, was finally settled, and a Sub-Committee was requested to see the details of furnishing, &c., promptly carried out, as the Exhibition on March 13th will be the last held at South Kensington. Reports were received and adopted from the Finance and the Chiswick Committees, whereby it is hoped that both increased economy and increased efficiency may be introduced into the Society's work. It was resolved to ask the advice of the Fellows' Committee on the following subjects—viz., 1, The appointment of Local Secretaries; 2, The best mode of affiliation between local Societies and the Royal Horticultural Society; 3, The advisability of petitioning the Government to include horticulture with agriculture under the new Government Board. The next meeting of the Council was fixed for March 13th.

—— THE WEATHER.—Writing from Brading, Isle of Wight, Mr. C. Orchard says—"What bitter weather we have been having! Here in this favoured place the winds and frosts combined are playing sad havoc with the Myrtles, Euonymus, Laurustinus, &c., that grow to a large size, and which are only injured in exceptional seasons. The condition of the spring flowers and shrubs, are in striking contrast to what they were a month ago. This is the coldest February here since 1854, just thirty-four years ago, but no doubt it will make it all the better for the fruit and other crops in the end."

—— "B. D.," writes from Scotland:—"The week ending 5th March has been similar to the preceding one, a cold N.E. wind prevailing throughout, except on two afternoons, when the wind changed to the W. for a few hours. The nights, with two exceptions, have been frosty, ranging from 2° to 9° on the night of the 1st inst., and 11° last night. The days have been sunshiny throughout. Farmers are getting far forward in the sowing of the Bean crop in Carse lands."

—— IN the southern counties, but especially in the metropolitan district, a very agreeable change has been experienced within the past few days. The temperature has risen considerably, with bright sunny days, that are most welcome after the long continuance of severe weather.

—— MR. R. GILBERT sends us from Burghley SAMPLES OF MUSHROOMS, such as he has been gathering from outdoor beds during the late unusually cold weather, also from an inside bed. The former were much the finer, and remarkable for their substance and freshness. One of these was 9 inches in diameter, upwards of an inch thick, and weighed ¾ lb., and when cooked was tender, juicy, and delicious. We award to the grower this, our vote of thanks and cultural commendation.

—— CEMENT FOR A GARDEN VASE.—"A. P." would be glad to know if anyone can recommend him a strong cement suitable for mending a garden vase.

—— GARDENING APPOINTMENTS.—Mr. Wm. Jordan, who for the past seven and half years has held the post of head gardener to J. H. Nix, Esq., Tilgate, Crawley, Sussex, has been appointed steward over the Tilgate estates, and Mr. D. Jones, his foreman, succeeds him as head gardener.

—— AMARYLLISES—"W. J." writes:—"Can any of your readers say what is the largest number of flower spikes an Amaryllis bulb will produce? I have a variety named Amazon showing nine spikes, and many more with three spikes. The largest bulb is 15 inches in circumference. Is this unusual?"

—— ROTHERHAM GARDENERS' MUTUAL IMPROVEMENT SOCIETY.—The usual monthly meeting of this Society was held in the Society's rooms, St. George's Hall, Rotherham, on Thursday evening, March 1st, Mr. W. Eskholme, Vice-President, occupied the chair, and about thirty members were present. A paper was read by Mr. W. K. Woodcock of Sheffield upon the history and cultivation of the Lapageria, after which many questions were asked upon cultural points by members, and replied to by the essayist. A vote of thanks to Mr. Woodcock was proposed by Mr. Butterill, seconded by Mr. Oswald, supported by Mr. Cooke, and carried unanimously. Several very pretty exhibits of miscellaneous cut flowers were upon the tables.

—— THE second issue of Mr. Lewis Castle's "CHRYSANTHEMUM ANNUAL" is before us, and we suspect no long time will elapse before it is possessed by most growers of the autumn favourite to which its fifty-three pages are devoted. The work opens with a concise chapter on Chrysanthemum topics by the Editor, in which among other things he estimates the number of Chrysanthemum growers in this country as exceeding 100,000. Mr. J. Wright follows with an essay on showing and judging, but whether he attaches too much importance to his shillings and pence system of recording the merits of blooms is for others to determine. He shows that a stand of twenty-four blooms exhibited by Mr. E. Coombs was worth 96s. 3d., and its competitor, Mr. M. Sullivan, 96s. Mr. George Gordon discourses on challenge trophies, as he is entitled, having, as he points out, assisted in awarding more prizes to them than anyone else has, and £7000 in money (not all his own). Mr. C. Orchard contributes an excellent account of new Chrysanthemums of 1887; Mr. N. Davis gives a select list of exhibition Japanese varieties, indicating the heights of the plants and time for taking the buds of each, in columns—an innovation that many persons will be glad to see. Mr. E. Molyneux follows on "Taking the Buds," and does his best to make the subject plain. Mr. C. Gibson writes on "Preparing for Shows," and tells his readers that exhibitors do not like being bothered with visitors the day before the event. Then follows a history of the

National Chrysanthemum Society, and Mr. H. Cannell tells of the first Chrysanthemum Show and how he befriended the Japanese—good Mr. Cannell! Mr. W. Bardney writes on Chrysanthemums in the North, Mr. J. Udale on them in the Midlands, Mr. W. Iggulden noting them in the Western Counties, all acquitting themselves well, as might be expected. Four pages are devoted to prize blooms at some of the leading shows, and six to certificated varieties—the most complete list that has been compiled. The work is adorned by the portraits of those "good men and true," Mr. Edward Sanderson and Mr. William Holmes, and its price is 1s., post free 1s. 2d., from this office.

—— It will be in the recollection of many readers that on the lamented death of Mr. Alexander Honeyman ("Single-handed"), an appeal was made on behalf of his widow and children. The contributors to the fund will be pleased to hear that the amount raised has been of substantial benefit, as will be seen from the following letter, received by Mr. J. Wright. Mrs. Honeyman, who was placed in a small stationery business at Grangemouth, writes:—"You will be glad to hear that we have succeeded beyond our expectations, as papers are always in demand. I can never forget that we owe it all to what was done for us through the Journal. All the children are well, and every one at school, the eldest in the sixth standard, the youngest in the first. I will not trespass longer, but again wish to thank all for their great kindness to us in the day of our extreme distress."

—— Mr. Joseph Mallender sends the following Summary of Meteorological Observations at Hodsock Priory, Worksop, Notts, for February, 1888:—Mean temperature of month, 35·8°. Maximum on the 8th, 52·3; minimum on 26th, 19·5°. Maximum in the sun on the 23rd, 111·3°; minimum on the grass on 26th, 2·9°. Mean temperature of the air at 9 A.M., 35·2. Mean temperature of soil 1 foot deep, 36·3. Nights below 32°, in shade twenty, on grass twenty-four. Total duration of sunshine in month, sixty-one hours, or 22 per cent. of possible duration. We had nine sunless days. Total rainfall, 1·29 inch. Maximum fall in twenty-four hours on the 14th, 0·40 inch. Rain fell on fifteen days. Approximate averages for February:—Mean temperature, 40·2°. Rainfall, 1·63 inch. Sunshine (seven years) fifty-eight hours. Colder than any of the previous twelve years except 1886. Nearly all the downfall came as snow, which attained a depth of about 4 inches in the open, but drifted in places. It wasted a good deal in the dry winds. The proportion of winds between N.W. and N.E. is very large.

SUB-TROPICAL PLANTS AND THEIR USES.

Where opportunities exist for the favourable cultivation of sub-tropical plants during the summer and autumn a most agreeable aspect is imparted to gardens. A position well sheltered from south-westerly winds should be chosen, as much disfigurement may be caused to the leaves of many plants by strong gales of wind during the early part of September, and just at a time when the plants are expected to be in full beauty. If possible, the position should also be secure from north-east winds in the spring when the plants are first placed in the beds, as a serious check is sometimes given from which they take a long time to recover. A position sheltered from these winds, yet open to the south to receive the sun freely, is best suited to the requirements of sub-tropical plants. A few notes on the best varieties, method of growth, and a few styles of arrangements may be of service to intending planters, although the latter is a matter to be decided according to local circumstances and individual taste.

Acacia lophantha.—This plant, distinguished by its elegant leaves, grows in one season from 2 to 3 feet high with one straight stem and numerous side branches. Towards the end of the present month sow the seeds singly in small pots of sandy peat soil, plunge the pots in a gentle bottom heat until the seedlings appear above the soil, then transfer them into larger pots. Grow the plants close to the glass and gradually harden them before planting out. As "dot" plants in carpet bedding this Acacia answers well, or planted in a mass in a bed, carpeting the soil beneath them with Perilla nankinensis in a small state, which must be kept pinched and dwarf. They may also be used with good effect in mixed beds of various sub-tropical plants, as the plants can be kept in shape if necessary by pinching out the points of the shoots.

Abutilon Thompsonianum variegatum.—When grown with a single straight stem this is a capital "dot" plant. It is also good in a mass at such a distance apart that the leaves nearly touch. A carpet of Agathea cœlestis (Blue Marguerite) beneath makes a suitable groundwork. When good soil is used the plants make vigorous growth, and the golden marble-like markings of the leaves come out boldly. Short cuttings inserted several in a pot during September in a gentle bottom heat make good plants if potted separately during February and grown in a cool house. Tops from stock plants may be inserted at the present time and quickly root. In any form the plants should not have the points of the shoots taken out, but be grown with one single straight stem. All lateral growths must be removed during the summer or pinched to one eye as best suits the position the plants occupy.

Cannas.—These are well adapted for the sub-tropical garden. They vary so much, both in height and colour, that they may be used in many positions with good effect. There are many varieties, some having dark coppery leaves, while others are green, and many also bear handsome flowers. To obtain a good effect they are best planted in a mass. Their preparation in the spring is simple. The roots may be wintered in the Mushroom house or cellar, keeping them moderately dry, and about the middle of March divide the roots if large. Place them in boxes or in pots, using any moderately good soil, arranging the roots in a cool house where growth will be steady, and not in any way drawn up weakly. From the boxes the plants are easily transferred to the beds without a check. While in pots the roots are liable to become matted around the sides. C. zebrina, Annei aurantiaca, Warscewiczi, and gigantea major are good varieties.

Centaurea gymnocarpa.—The narrow silvery foliage of this Centaurea well suits for planting beneath the dark-leaved Castor Oil plants, or as edgings to beds with similar coloured leaves. The easiest way to secure a stock of plants is by sowing the seed in a gentle hotbed at the end of the present month or early in the next. Pot the plants as soon as ready, growing them on in a temperature of not less than 60° as near the glass as possible to prevent their drawing up weakly, hardening them off thoroughly previous to planting out.

Chamæpeuce diacantha and Casabonæ (Fish-bone Thistles).—The former has white foliage with long spines, the latter green foliage, shorter, and small brown spines. For "dot" plants either is adapted when arranged with suitable colours—as, for instance, the white variety planted amongst Herniaria or red Alternantheras, and the green sort with any white or yellow bedder of dwarf habit. Either makes a good edging to many kinds of foliage beds. Sufficient space should be allowed between the plants to allow a proper development of the leaves. Planted alternately both varieties have a good effect. By treating them in the same way as advised for the Centaurea capital plants are easily obtained.

Grevillea robusta.—An excellent plant, having Fern-like foliage, capitally suited for the flower garden, either as a "dot" plant or associating with others. Perhaps the former manner of planting this Grevillea is most suitable to its evenly balanced foliage when employed for bedding purposes. Seedling plants at the end of the first year will be from 1 to 2 feet high, and may be lifted from the beds early in October. Potted and wintered in a cool house without the loss of their leaves such plants are useful for other purposes in the next season. The seeds should be sown early in the year in a brisk bottom heat, as they take a long time to germinate. Pot the plants as soon as they are large enough, adding some peat to sandy soil, and grow them in a Melon house or vinery where a brisk heat is maintained until they reach a good size, afterwards harden them gradually.

Humea elegans.—Where these succeed they are generally much appreciated; their long drooping spikes of graceful flowers, plume-like, are handsome. Planted singly they are the most attractive. In many places directly the plants are placed in the beds they die in a most unaccountable manner, which is very disappointing. Sow the seed in sandy soil in a cold frame in June, shading from bright sun, potting them as required until 7-inch or even larger pots are used. A position in the cool greenhouse during the winter suits them best.

Perilla nankinensis.—This and other varieties are useful where a little dark bronze colour is required. The plants can be kept dwarf, or they can be had 2 feet high, and for planting in mixed beds very useful. It is not wise to grow the plants too large before planting, as the bottom leaves are liable to fall if a check is given them either by cold or dryness at the roots. The middle of March will be early enough to sow the seed, placing the pots in a moist warm atmosphere, pricking the seedlings into boxes as soon as large enough; by this means a sturdy dwarf habit is maintained.

Ricinus africanus and Gibsoni.—Two of the best Castor Oil plants; the latter, with dark foliage, usually grows from 3 to 6 feet high, according to the treatment it receives. It is the most commonly used, adapting itself to a variety of purposes, such as singly or mixing with other foliage or flowering subjects, such as dotting here

and there among scarlet Pelargoniums. The green variety is much more robust. I have seen plants grow 8 feet high in one season, which had a noble effect, the immense green leaves and red stems contrasting well with the surroundings. Early in March sow the seeds singly in small pots, as from these the plants are more easily transferred to larger ones without check than when several are in a pot.

CANNABIS GIGANTEA.—The Giant Hemp is not often seen except in favourable positions, such as near water in low situations, where it grows to a height of 12 feet in a season. The leaves are deeply serrated and of a pleasing green tint. The plants should only be small when planted out, as they run up quickly, and if very tall growth is not wished, early in April is soon enough to sow the seed.

SOLANUMS MARGINATUM, ROBUSTUM, AND PYRACANTHUM.—Useful plants for the sub-tropical garden. The former grows vigorously, but may be kept to a height of 2 to 3 feet by pinching the points of each shoot. A row next to Ricinus Gibsoni has a good effect. S. robustum has much larger green leaves and requires more space, but is effective. The last named makes an excellent "dot" plant surrounded by low-growing plants. Its narrow drooping leaves, with long brown spines, are very graceful in appearance. Sow the seeds early in March in a brisk bottom heat.

WIGANDIAS.—These possess noble foliage, and where space can be given them a fine effect may be had. Sow seed at once, in a similar manner to that required by the Solanums.

CASUARINA SUMATRANA.—A plant with drooping feathery foliage, useful for the summer garden either in small or tall plants. Planted singly it shows to advantage. A stock of plants may be raised by means of seed sown in February or by cuttings inserted in April in a cool house.

DRACÆNA INDIVISA.—Either in a small or large state this is most useful for the summer garden. Planted singly in a carpet of red Alternanthera, Antennaria, or any other low-growing plant, it is very elegant.

EULALIA JAPONICA VARIEGATA.—One of the best "dot" plants we have. A stock is easily obtained by dividing an old stool in the spring, starting them in a gentle heat, after which a cool temperature suits them best.

FICUS ELASTICA.—This should be planted in a mass to be effective. If a purple or blue Viola be used to carpet the bed between the plants a good effect is obtained. Where an old stock plant exists, cuttings from 6 inches to 1 foot in length strike readily if placed singly in pots filled with sandy soil and plunged in a brisk bottom heat. A stake should be placed to each cutting to prevent their becoming loose in the soil occasioned by their weight.

FERRULA COMMUNIS.—With its flat Fennel-like leaves this is very effective when the plants are of medium size, especially near the margin of a bed or on the edge of a pond. Seeds sown early in March in a gentle hotbed quickly yield plants that soon reach a suitable size for planting.

MELIANTHUS MAJOR.—Notable for its glaucous green foliage, planted singly and restricted to a single stem is a very showy plant, but is not often seen. Seed can be sown in the spring, or suckers can be taken from the base of an old plant with roots attached, and these quickly grow into a useful size.

PHORMIUM TENAX VARIEGATUM AND P. COLENSOI.—The Phormiums are perfectly hardy in the south of England, are easily increased by division of the roots, and are well adapted for planting in a mixed bed as they are to stand, singly either on the grass, or in the centre of a bed containing low-growing plants.

AGAVE AMERICANA VARIEGATA.—This is often used in the summer for the sub-tropical garden, carpet beds, or the rock garden. Anywhere placed singly it is effective. Offsets which spring from the base of plants quickly grow into a serviceable size. If the pots are simply plunged during the summer where needed they are much more easily housed in the autumn in a cool greenhouse.

ZEA JAPONICA VARIEGATA.—Much valued for its silvery-like foliage, which is heavily striped with green. Seeds sown singly in small pots in a gentle heat about the middle of March quickly germinate, and the plants grow to a good size if transferred to larger pots, using rather poor soil.

EUCALYPTUS GLOBULUS is much liked by some persons for the fragrance of its leaves and for its blue colour. Seeds sown now in a brisk bottom heat soon yield useful plants if not allowed to become drawn weakly by overcrowding. In a mass by itself or mixed with other plants, allowing room for a free development of its branches, it is a capital plant for sub-tropical gardens.

FUNKIA SIEBOLDI makes a capital edging to other taller-growing plants of a dark or deep green colour. It is perfectly hardy anywhere. Division of the roots is a ready way to increase the stock. —E. MOLYNEUX.

ROSES

ROSE SHOWS IN 1888.

June 30th.—Eltham and Reigate.
July 3rd.—Bagshot, Canterbury, Diss, and Hereford.
" 4th.—Croydon.
" 5th.—Bath, Farningham, Hitchin, and Norwich.
" 6th.—Sutton.
" 7th.—Crystal Palace (National Rose Society).
" 10th.—Ipswich.
" 11th.—Tunbridge Wells.
" 12th.—Winchester.
" 17th.—Leek and Ulverstone.
" 18th.—Birkenhead.
" 19th.—Helensburgh.
" 20th.—Darlington (National Rose Society).

The above list contains all the Rose Show fixtures that have as yet reached me. In future lists I shall be pleased to insert the dates of any other Rose Shows that I may receive, also those of any Horticultural Exhibitions where Roses are made a special feature of the Show.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

WE are informed that the Committee of the Brockham Rose Association have accepted provisionally an invitation from Mrs. Gough Nichols to hold their Show for the fourth time at Holmwood Park near Dorking, on Thursday, June 28th, 1888.

MDLLE. FRANCISCA KRUGER.

A COLOURED plate of this Tea appears in the February number of the *Journal des Roses*, with some remarks by M. Pierre Du Plouy. Although not altogether a new Rose, it is not the less sought after, he says, by rosarians. Its vigour, colouring, and agreeable perfume render this beautiful variety much appreciated in the neighbourhood of Paris, as well as in the countries of the north. Sown in 1873 in a mixed lot of seeds, it was sent out by the raiser, M. P. Nabonnand, in 1879. It forms a vigorous bush, with handsome green foliage, and possesses a very strong constitution. The flowers are large, very full, well formed, of a pretty flesh-white, coppery, shaded yellow and rose. Grown out of doors for cut flowers it is not perhaps a Rose of the first order of merit, but excellent results are secured by placing it under a frame or in a greenhouse. He particularly recommends it as a garden Rose for growing on walls and columns, where it blooms abundantly.

THE DESCRIPTION AND CLASSIFICATION OF ROSES.

THE *Maison de Campagne* publishes the following letter from a correspondent on the classification of Roses :—"Although it may be difficult to restrain the liberty of the raisers of Roses, it would be possible to diminish the number of so-called 'novelties.' It would also be practicable to simplify the catalogues where the same variety figures under different names—where the same Rose is described amongst the Teas, then amongst the Noisettes, &c. It is very desirable that a less fanciful classification should be adopted than exists at present. Another step that might be taken with advantage would be to regulate the designations and choice of terms for describing the different varieties in order to give an approximate idea of them. At present it is very difficult to recognise them, even the colours being badly defined and applied. A flower may be described in a catalogue as salmon rose, when in reality it approaches more nearly to carmine. Purple, again, is often given in place of crimson, while some varieties of various shades are described in a manner quite opposed to the reality. What is wanted is a defined gradation of colours and tints. The taste for Roses is so widespread at the present time that it would not be idle to attempt to devise some means for the better classification of Roses, and, judging by myself, amateurs will readily combine with the specialist to this end."

A STRIPED NIPHETOS.

A STRIPED Niphetos is announced from America by Mr. Wilson says a French journal. The stripes are described as green and white, and much prettier than those of the "American Banner."

MARÉCHAL NIEL ROSE.

"N.," page 107, may be congratulated on having his instructions on the non-ventilation of forced Maréchal Niel Roses fully endorsed by such an experienced rosarian as Mr. D. Gilmour, jun., page 173, but I am inclined to the belief that there is something more to contend with than sudden bursts of sunshine before the end of March. Keeping the ventilators closed until April may be the best method to adopt and prevent mildew, but I doubt it. I did not bring the case forward of the plant in Mr. J. C. Reid's gardens as a proof that "N.'s" instructions were wrong, but to show that Maréchal Niel Roses could be successfully grown without "N.'s" restrictions as regards ventilation, and for the purpose of eliciting information from those more experienced in the cultivation and management of Maréchal Niel Roses than myself.—L. T.

THERE is much difference between a Rose that is forced into bloom

and one that is allowed to come forward naturally in a cool house. The foliage of those that are developed under warm genial conditions is naturally tender, and consequently easily checked by the admission of cold air. The young foliage of plants that develope under cool airy conditions may to all appearance be equally tender and delicate, but such is not the case, for they withstand the cold air around them without experiencing a check. Early in the season, say during the months of February, March, and I might say the greater part of April, if not the whole of that month in the majority of seasons, it is impossible to admit air in a sufficiently warmed condition to be advantageous to forced Roses. The sun may at times appear warm and raise the temperature of the house considerably while the air is piercingly cold—too cold, in fact, for the rosarian to admit it to his plants if he is anxious not to subject them to an attack of mildew. Nothing will cause mildew sooner than the admission of cold air, and it is often impossible to protect the young foliage from draughts even with closed ventilators. If "L. T." had been engaged in the production of Roses on a large scale early in the year, and had to remove his plants after placing them in 5-inch pots to make room for others coming on into rather draughty pits, he would find that matting up the frames, not only at night, but during the day in cold weather, was a necessity if he wished to keep the plants free from mildew.

I have condemned in these pages the admission of air to Roses early in the season, and have done so from practical experience. The temperature recommended was intended to be from fire heat, and during cold, severe weather I prefer to see the house 50°, rather 55°. On mild occasions gentle heat is kept in the pipes, whatever the temperature be. By day, when the weather is mild and the season has advanced fairly, no fire heat is used; in cold weather the highest figures given are not exceeded.

"L. T." asks what position would I recommend for a forcing house for Maréchal Niel. That entirely depends whether the structure is a lean-to or a span-roof; if the former, a southern aspect; if the latter, the ends running north and south. The admission of air freely to the tree in Mr. Reid's garden does not insure it against mildew, or why are we ever troubled with it on the plants outside? Under cool treatment Maréchal Niel, if healthy and in luxuriant condition, is not much subject to mildew. Under the same conditions the old Gloire de Dijon and many others are more liable to be attacked, while when forced the Maréchal is one of the very first to fall a prey to its ravages. From "W. W.'s *East Yorks*," letter it is clear that his plant under the ventilating system is not proof against mildew. But neither his plant or the example produced by "L. T." can be said to be forced; by the treatment the plants receive they come forward naturally. I was pleased to see that such an able rosarian as Mr. D. Gilmour, jun., endorsed my instructions, and I can freely confirm the advice he tenders to Mr. Reid's gardener, for my plants have suffered from the cause he advises him to guard against. If this variety carried less flowers, especially in its early stages, I believe that it would be constitutionally stronger, and last in health for a much longer period.—N.

"W. W., *East Yorks*" (page 173), in his article on Maréchal Niel, says:—"If that dreaded pest mildew does appear, I find no difficulty in keeping it in check by using the mixture so often described in the Journal—viz., softsoap, sulphur, and petroleum." I should feel very much obliged to "W. W." if he would kindly give the proportions of each to the gallon of water.—A. B., *Ayrshire.*

ROSE CUTTINGS.

Any that have been inserted in the open ground after the style of Gooseberry and Currant cuttings must be examined directly the frost has disappeared. The majority of them will be found upheaved 2 inches or more out of the ground, and unless they are pressed back into the bottoms of the holes originally formed and the soil made firm about them very few indeed will strike root. A mulching of either strawy manure, ashes, or leaf soil to a certain extent prevents this upheaval by frosts, but even where they are thus treated it is advisable to look them over and fix any that require it. Properly attended, 90 per cent. should strike root and make good plants this season. It is too late to insert more cuttings in the open ground; but if a number of strong cleanly cut pieces of ripened wood about 12 inches in length, with or without heels, have the lower half of the buds removed and are at once firmly dibbled into a border at the foot of a north wall, many will strike root. In this instance it is advisable to mix plenty of leaf soil and grit with the ordinary soil, the cuttings being buried in this to about one-half of their depth. Rub out the first buds that break, the object being to retard top growth till the cuttings are callussed. If the former takes place first the cuttings will fail to strike.

STRIKING CUTTINGS OF TEA ROSES

When strong well-ripened growths of these can be obtained it is possible to root them in the open ground, or similarly to the Hybrid Perpetuals. Those having a number of plants growing against sheltered walls may adopt an equally sure method of striking cuttings. Select short medium-sized shoots, taking these off with a heel or a thin portion of old wood attached, and shorten the tops to about three good joints, leaving the leaves on these. Dibble each singly in the centre of a 3-inch pot filled with loamy soil and surfaced over with sharp sand, taking care to fix the cutting firmly. Water them in, plunge closely in a gentle hotbed, and cover closely with handlights or bottomless boxes covered with large squares of glass. If kept perfectly close and shaded from bright sunshine they will strike root in about three weeks. When well rooted gradually expose to full light. They ought not to be long kept in these small pots, nor be prematurely hardened. First shift them into 6-inch pots, and when growing strongly they may either be hardened off and planted out, or be transferred into larger pots for flowering under glass.

PLANTING ROSES.

Directly the ground is again in a fit state for planting, any Roses laid in by the heels should be planted out. Others may be transplanted, but in every case extra pains ought to be taken, or failure will most probably be the result. The soil should be made as congenial as possible to the roots, this to induce an early formation of fibre. In addition to digging in plenty of manure deeply, add a liberal dressing of either leaf soil, old Mushroom-bed manure, burnt garden refuse, or any material that when well mixed with the surface soil will keep it in an open condition. Little or no fibre will be formed in heavy lumpy soil, and this is also the first to feel the effects of drought. Tea Roses being usually supplied well-rooted in pots may be planted out a little later, or after there is less likelihood of severe frost being experienced.

PRUNING CLIMBING ROSES.

Tea and Noisette Roses growing against sunny walls are the first to flower, and what pruning needed ought to be completed at once. Healthy vigorous plants to have the wood lightly thinned out, the leading branches shortened to about half their length and laid in, all lateral growth and spray being freely cut back. Plants that are weakly will be improved if cut rather hard back, as the stronger the growth the more flowers the Teas produce. Maréchal Niel flowers principally on strong well-ripened young growths, every joint producing a bloom. Preserve these, therefore, to nearly their full length, and cut out as much old growth as possible, this inducing the formation of more strong growths for next season. Hybrid Teas including the serviceable Cheshunt Hybrid also to be well-cut back, leading growths being shortened and laid in where space has to be filled. Banksian Roses produce trusses of flower from both spray and medium-sized well-ripened growths. Thinning out and shortening back is necessary, very rank growths being cleanly removed unless wanted for filling vacant spaces. —W. I.

ROBY HALL, LIVERPOOL.

The old established seat of Wm. Pilkington, Esq., J.P., D.L., surrounded by villas and small mansions of modern style, "which add grandeur by contrast to the more venerable mansion," is also a home for horticulture in its many branches, and a place where gardening in its less popular days was carried to a successful issue, and held up as an example to the Liverpudlians, which by the way they were not slow to follow, for in no part of the kingdom do we find a higher or more general taste for gardening than in the neighbourhood of Liverpool. Orchids, foliage and flowering plants, Chrysanthemums, herbaceous plants, as well as fruit, all have their champions here, as testified at our leading exhibitions.

The flower garden in former seasons has been devoted to the usual bedding out, but the beds are now undergoing the process of remaking and remodelling for the reception of herbaceous plants, and with a judicious selection of these, such as Mr. Jones can well be trusted to make, we prophesy a great transformation such as will fully compensate for the labour. A centre bed has been prepared as a loose rockery for some of the smaller but not less deserving plants, and cannot fail to be highly pleasing when established.

The conservatory is attached to the mansion and is always gay with bloom. During our last visit just before Christmas the house was full of Chrysanthemums. "What fine blooms!" was our exclamation on entering, "and so late in the season too!" They were really fit for exhibition, especially the incurved varieties. The problem seems to be how to produce good bloom late in the season, for Christmas and towards spring. Here in some Peach houses was a large quantity of well-budded plants calculated to maintain a supply into the new year. Stove plants, such as Crotons, Dracænas, &c., are grown for house decoration only. They are clean, healthy, well-furnished plants for this purpose, pictures of robust health; and Gardenias planted out at the back of one of the stoves are well calculated to afford a capital return of bloom. Orchids are sparingly represented. Dendrobium nobile, however, is here in quantity, well cared for, and evidently prepared to compensate for its liberal treatment by abundance of bloom when needed. Greenhouse plants for cut bloom and decorative purposes consist of Primulas, Cinerarias, &c. Specially useful, however, are the several varieties of Ivy-leaved Pelargoniums, of which quantities are grown, and Primula Sieboldi. One of the features at Roby Hall is the Fern Lygodium scandens, thriving like a weed; and hardily grown as we find it in the vineries on back walls, it is most valuable for table decoration, for trailing on mantel-boards and mirrors. Being free from the brown semi-decayed appearance it frequently has when grown in too much heat, and so unique in habit and also standing well in a cut state, it is certainly worthy of the space afforded it.

The fruit houses we find as well cared for as other departments. Cleanliness is the order of the day. The Vines are heavily cropped annually, so that we do not find Grapes up to exhibition style, though quite in form for table. Alnwick Seedling finds favour, and deservedly so, the wonder being that so few grow what is one of the most desirable

Grapes in cultivation. In long ranges of well furnished Peach houses large crops are annually produced, and the appearance for the coming season is all that can be desired. In some frames we find a capital stock of Vicomtesse Hericart de Thury Strawberries for forcing. This variety seems to be the popular favourite for forcing everywhere, its constitution, as well as its productiveness and flavour, rendering it most valuable. The forcing house was well filled with Azaleas and bulbs to meet the large demand for cut flowers, and the Cucumber house was not allowed to rest after its summer work. A brace of Cucumbers cut from here, and awarded a certificate by the Liverpool Horticultural Association, were models. A constant supply of Mushrooms is maintained in a house devoted to their culture, the supply bed at the time of our visit being literally covered. The good results obtained in all departments bear testimony to the general knowledge and skill of Mr. Jones, who very generously attributes much of his success to his foreman, now awaiting an appointment as head gardener.—S.

LACHENALIAS.

These beautiful greenhouse bulbous plants are not grown so much as they deserve to be. They cannot be too strongly recommended for winter and early spring flowering in pots or baskets. They are easy of culture, and will grow in almost any position, flowering at a time when flowers of their colour are scarce in the conservatory. To those who have a desire to try them, and are not acquainted with their culture, a few simple hints may be useful. Procure the bulbs not later than the middle of September, placing six to eight in 5-inch pots in a compost of half loam, the remaining half equal parts of leaf soil and well decomposed cow manure, with a dash of sand. These pots may be placed in a cold frame till the bulbs start growing, then transfer them to a greenhouse, or any other place where frost is excluded. These plants then require very little attention until the flower spikes appear, as insects scarcely ever attack them. About Christmas, or when the flowers are growing freely, a little weak liquid manure once a week will benefit them. If wanted early they can then be placed in a temperature of 50°, when they will be in flower in about six weeks. They continue attractive for six to eight weeks, and their beautiful erect yellow spikes have a charming effect when arranged with other flowers. They increase freely, each bulb producing four to six others, which flower the following year. The two best varieties I am acquainted with are Nelsoni and pendula.—T. H.



ORCHIDS AT MOUNT VIEW, SHEFFIELD.

The proprietor of the above-named place, D. Ward, Esq., has long been well known locally as an ardent lover and supporter of horticulture in general, and of late years his attention appears to have been more especially devoted to Orchids, of which he has from time to time made extensive purchases, so that now he is the possessor of a very extensive and valuable collection of plants, which appear to be in the most robust health and vigour, reflecting high credit upon the head gardener, Mr. Page. In a rapid run through the numerous houses a few days since some notes were taken, which are appended.

A house is specially devoted to Phalænopses, and nearly all the known varieties are represented. Especially noticeable was a remarkably fine variety of P. amabilis with flowers fully 4 inches in diameter. The flowers of many have suffered much from recent dense fogs, which have caused the buds to fall unexpanded. Most of the larger plants are grown on teak wood cylinders 9 to 12 inches in diameter and 18 inches deep. These cylinders were recommended in the Journal a few weeks since for Phalænopsis culture, and are evidently well adapted for the purpose, the large stout roots running freely over the whole outside surface. The leaves also produced last season were very large. Growing in the Phalænopsis house are about thirty plants of Odontoglossum Roezli, which are very vigorous, and appear quite at home ; also twelve plants of Cypripedium Lawrencianum, one in a large pan 3 feet across, and all with very large and highly coloured foliage.

In the Cattleya house large specimens of C. Trianæ are flowering freely. Several plants of C. Percivaliana were also flowering, with C. amethystoglossa and the pretty Lælia acuminata on a side stage filled with healthy plants of C. Mossiæ, C. Mendelli, C. gigas, and others. Over 260 flowers were counted. One plant of C. Mossiæ in an 8-inch pot has eleven strong sheaths. In the same house are strong plants of Dendrobium Wardianum, the growths of which averaged 3 feet in length. D. albo-sanguineum was here seen with growths equalling in size good specimens of D. nobile. D. luteolum was in flower, and is very distinct and pretty, also D. crassinode very strong. D. nobile was represented by numerous large specimens, the growths averaging 2 feet long and very stout. Mr. Page, the gardener, is a believer in pruning, and certainly as practised at Mount View it appears to be a very commendable practice. He tells me he follows no hard-and-fast rule, but prunes according to the vigour of the plants. We noticed, however, that on few of the plants were any growths left, except those flowering and those made during the past season. Cattleya citrina is represented by large plants, which have all made vigorous growths and are showing flowers freely. Lælia anceps has been very fine, one specimen has carried twenty flower spikes. Odontoglossum vexillarium is represented by about fifty strong plants grown in a low span-roofed house with a collection of Lycastes, and in which a temperature of about 65° is maintained. In the Odontoglossum house some hundreds of fine healthy plants are to be seen of all the best varieties. Of Odontoglossum crispum there are some fine varieties ; O. Rossi majus is flowering, also a large number of Sophronitis grandiflora. In the conservatory is a splendid display of Cœlogyne cristata and Lemoniana, a pan of the latter carrying thirty-five strong flower spikes.—W. K. W.

CALANTHES IN TANNERS' BARK.

Two years ago after potting what I required there were a few small pseudo-bulbs left, which I was about to throw away, when it so happened that at the time there was some bark from the Pine pit laying on the potting table, as it is used for mixing with composts here in place of leaf mould ; and having noticed that various plants root readily into and grow vigorously after their contact with it, I thought I would put the few small ones into pots with nothing but the bark, just for an experiment. These were placed along with the others, received the same treatment as to heat and moisture, but the growths they made were so much superior to the others in comparison to the size of the pseudo-bulbs that I was astonished, and when they were shaken out of the old compost there was the same marked difference, for whilst all had made good roots those in the bark were masses of roots. I was so satisfied with the small experiment that I resolved (right or wrong) to grow them all in bark again last year. As the result all who saw them were astonished at their strength and vigour. The query was, What are they grown in ? On being informed one or two of my neighbours who have no bark pits were so favourably impressed with the treatment that they asked me to let them have a little bark this spring to grow theirs in.

I have just been shaking the plants out again, and the pots were so full of roots that it was difficult to disentangle them—in fact impossible, without breaking some of them. The pseudo-bulbs of Calanthe Veitchi graduate in length up to 9½ inches full, with a girth of 6 inches. The flower spikes varied in length from 2 to nearly 4 feet. Calanthe vestita did equally well and made pseudo-bulbs much larger than I have had them before. It struck me whilst busy with them that as others would be preparing for potting for another season the result of this experiment might be interesting, and might bring out the experience of others. I have never seen nor heard of their being grown in bark before, and should be glad to hear if anyone else has. All our plants will be grown in it for the future.

I generally start them in boxes in moss placed upon the evaporating troughs in the stove, always keeping the moss moist, until they begin to show their leaves, when they are placed into 6 and 7-inch pots, three in a pot, well drained, and the material covered with moss to prevent the bark running into it. This size pot I find is better for them than larger ones. The pseudo-bulbs are placed firmly into the bark, and the bark well covered with sphagnum to keep it from being washed out when watering. Noticing the dark colour of the water which ran from the plants I thought it was a pity it should be wasted, besides staining the shelves, so I placed them in feeders, which seemed to suit them well, besides saving time in watering, as there was always a moisture about them. Beyond this I simply used the syringe freely in the growing season, and had them on a shelf as near the glass as possible with a slight shading.—J. Smith, *Leeds*.

ORCHIDS AT LEEDS.

Mr. Walter Cliffe's Orchids at Western Flats, Wortley, Leeds, though not very numerous, are highly attractive, and remarkably well grown, and reflect the highest credit on the careful gardener, Mr. Hyam. Three small houses are devoted to their culture ; No. 1, the Odontoglossum house, containing some 200 plants or more, principally O. crispum (Alexandræ), several of them in flower, others sending up strong spikes, amongst which

are some very good varieties, O. Cervantesi, O. Rossi majus, also in flower, O. Roezli, O. Pescatorei, O. grande, O. citrosmum, O. vexillarium, &c. No. 2 contains a miscellaneous collection, including Cœlogyne cristata now in flower, one of them a splendid plant 3 feet in diameter, several good examples of Dendrobium nobile, D. suavissimum, D. chrysotoxum, D. Parishi, D. Pierardi, and D. Wardianum. A fine plant of the latter, with growths 3 feet long, is suspended in a basket from the roof. Of Cymbidium eburneum good plants are sending up their flower spikes. Cypripedium Stonei, C. Veitchi, Masdevallia tovarensis, Oncidiums, Trichopilias, &c., are all good. No. 3, the Cattleya house, was gay with some twenty good flowering plants of C. Triange, amongst them being some remarkably good varieties with flowers measuring one of the largest specimens. This is growing in a pot 17 inches in diameter, and has had 104 racemes of six to nine flowers each, or a total of about 800 flowers. Smaller plants in 24 and 32-size pots have fifty and thirty racemes each, the total number of racemes out at one time having been 700.

Mr. Walter King, the gardener, has obliged us with the following cultural hints, and his success renders his practice very interesting:—"As the following hints on the growing of Cœlogynes are chiefly intended for amateurs and beginners, the instructions are as brief and simple as possible. Commencing with this lovely Orchid in the flowering stage of treatment, I would advise in the first place not to cut the old flowering spikes too close to the pseudo-bulbs, say about 1 inch, as it will be observed the new breaks come freely from

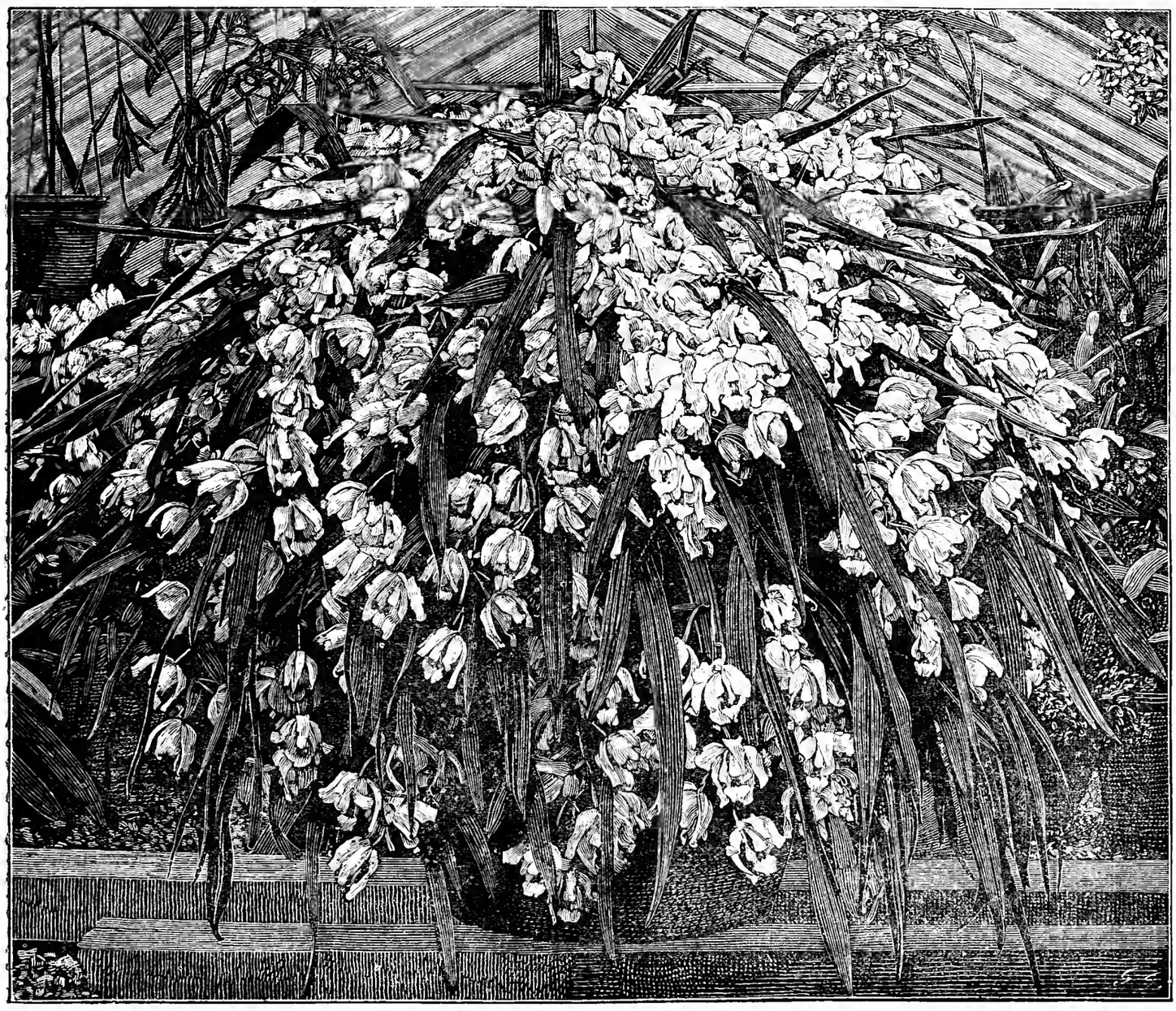


Fig. 25.—MR. PHILLIP CROWLEY'S SPECIMEN CŒLOGYNE CRISTATA.

7 inches across. A good specimen of C. crispa, this plant last year produced sixty-four blooms. C. Mossiæ, C. Mendelli, C. Dowiana, C. Perceivaliana, Lælia purpurata, L. albida, L. anceps, L. majalis, and others too numerous to mention in this brief note are well grown.

I cannot allow this opportunity to pass without expressing the pleasure it gives me to record the progress that has been made in this locality in the cultivation of Orchids, thanks to Mr. Lewis Castle for his exertions in the publication of a sound practical work on the subject at a price that brings it within the reach of all.—L. T.

CŒLOGYNE CRISTATA.

Reference was recently made to the display of Orchids in Mr. Phillip Crowley's collection at Waddon House, Croydon, and we are now able to give an illustration, prepared from a photograph, of

the base of the old racemes. When the flowering season is over we give our plants about six weeks' rest, keeping them somewhat dry, and it does not injure them to shrivel slightly. This treatment will cause them to break freely, and more water may then be given. When the pseudo-bulbs are swelling and in active growth, I find the plants like some stimulant, and what we use here is liquid from the cow house, but it requires care. One quart of liquid mixed with two and a half gallons of water is ample and safe once a week. This applies to established plants, newly potted plants would require only clear water for the first season. We grow our plants in the Cattleya house in a group, as this enables us to syringe between the pots and lightly over the foliage. We ventilate freely, guarding against cold winds, and closing the house in the afternoon according to the weather, leaving a little ventilation all night. This will greatly assist in maturing the pseudo-bulbs, which is one secret of

success. When the pseudo-bulbs have finished growth give only sufficient water to keep them plump until the flower spikes show, then gradually increase the water supply, taking care not to pour it on the flower spikes, as it will cause them to go black and decay. We keep our Cœlogynes in the Cattleya house all the year round. The compost is two parts of good fibrous peat, one of charcoal, and one of sphagnum well mixed together, with plenty of drainage."

ORCHIDS AT BLENHEIM.

THE extensive glass department at Blenheim continues to increase, and notwithstanding the amount of room afforded by a score or more large Orchid houses, the plants are arranged closely together; indeed, many of the pans and baskets hanging from the various roofs are actually touching each other. One great advantage derived from having houses with different aspects and temperatures is that plants which do not succeed in one may be shifted about until the best one is found. If I remember rightly the Mexican house has been turned into the Vanda or East Indian house, and the Odontoglossums of the crispum section have been transferred from a large and lofty house about 70 feet long to a new one 116 feet in length with a much lower roof, with the result that the growths are much stronger, and the condition of the plants would satisfy the most sanguine. Their old abode is now occupied with Cattleyas and Lælias, and the great amount of air and direct light which was not the best for Odontoglossums are very beneficial to the newer occupants. Cattleya Wageneri is here in fine condition, one large plant in a basket has nine good sheaths. On one of the side stages are 500 C. Bowringiana, many flowering freely. Like most other species they vary considerably in size and depth of colour in bloom, but the best are very beautiful. It is a useful winter blooming Cattleya, bearing some resemblance to the well-known C. Skinneri in the flowers, which are borne on erect spikes averaging five or six on each, being about 2½ inches in diameter, and of a rich rosy purple with deeper coloured veins; the anterior portion of the lip is deep purple, and has a transverse maroon band, below which is a white blotch. Also in bloom are some fine forms of Lælia pumila præstans in shallow pans, and Lælia albida. On the other side stage are numerous plants of the lovely C. Lawreneeana and C. Harrisoniana, the latter in flower. Above the path are suspended plants of the quaint looking Cœlogyne pandurata. Lælia cinnabarina is grown in 6-inch to 9-inch teak baskets, and some of them are finishing as many as nine good strong growths each. The centre stage is filled with Lælia purpurata, C. Meudeli, having eight and nine flowering sheaths on each, C. Eldorado and C. Gaskelliana, while C. amethystoglossa and C. Leopoldi are remarkable for their fine growth in this house.

The large Cattleya house is worth going many miles to see; it is over 100 feet long by 20 feet wide, and although the end of December is about the worst time of year to find much in the way of bloom, yet the few that are in help to make the place attractive, and the hundreds of flower sheaths already formed promise a grand display by-and-by. One of the most noticeable perhaps is a specimen of Lælia purpurata, 6 feet across, and carrying twenty-two flower sheaths. Immense pieces of Cattleya Skinneri, C. Mossiæ, and C. Mendeli are showing well, and the first of C. Trianæ is already in bloom, together with C. maxima and several of C. Dormaniana, and among others thriving admirably are C. aurea, C. Sanderiana, C. Schilleriana, Oncidium sarcodes, Epidendrum Stamfordianum, and numbers of large pans of the useful Cœlogyne cristata. An interesting feature here is the great rockwork opposite the following doors at each end, and the natural way in which many Orchids are growing on them. Pockets or rather well-lined openings have been left and filled with drainage and compost to suit the individual requirements of each plant.

The Pescatoreas and Warscewiczellas, which are unmanageable in the majority of Orchid collections, are growing freely: the leaves are all free from spot, and produced abundantly together, and the roots are clinging to the rough stone surface, which they appear to like much better than a quantity of potting material. Zygopetalums are in a similar condition. Z. Gautieri, with fine spikes of bloom, Sobralia macrantha, and S. virginalis, with Cymbidiums, are also planted out and growing vigorously. Some of the Cattleyas and Lælias like the treatment, but in my opinion they should not be put out unless intended to remain, for after the roots are attached to the stone it would be difficult to transfer them into pots without breaking the best roots.

Two houses are devoted to Cypripediums, one having a wide centre stage containing other Orchids besides, including a quantity of Vanda teres planted out and rooting freely, splendid specimens of Cymbidiums, C. eburneum, C. Lowii, and C. giganteum, and C. Mastersi in bloom, but these are soon to be removed, and the end they occupy will be filled with choice Phalænopses from a smaller house. The side stages are planted with Cypripediums, crocks being laid thickly on the bottom and the roots covered with a layer of growing sphagnum; they include plants of C. Boxalli, C. caudatum, C. ciliolare, C. hirsutissimum, C. Lowi, C. lævigatum, C. Lawreneeanum, C. Pearcei, C. selligerum, and C. Stonei anum, with C. grande, and C. nitens showing flower spikes. Calanthe Veitchi in bloom is dotted freely amongst them, and Oncidium Lanceanum enjoys the heat growing in baskets suspended from the roof.

The other house is more like a span-roofed pit, and the dwarf-growing ones are established there, such as Cypripedium concolor and C. Godefroyæ with a hundred healthy pieces of C. Sanderianum and many C. Hookeræ. Maxillaria Sanderiana is represented by a fine plant, but which has not yet flowered. Aerides mitratum, Angræcum Ellisii, A. Sanderianum, and A. Scottianum are remarkably well grown and flowered. Cymbidium Parishii is making seven new growths from three old ones. Odontoglossum Roezlii and O. vexillarium are rooting well in new material of peat and sphagnum. Overhead several fine varieties are in bloom of Odontoglossum Krameri and Paphinia grandis, and Odontoglossum Phalænopsis deserves special mention on account of its numerous growths and clean and healthy appearance. Another house is filled with various Odontoglossums planted out in the peat shaken from the fibre. It is found to be a good practice to start them when a large number of imported plants are received, and as they begin to root and make new pseudo-bulbs they can be drawn from the loose soil and potted without risk of breaking their roots. In what is styled the O. grande house are many other species; O. Insleayi splendens is plentiful, and from one growing here the drawing for the *Reichenbachia* was made, Oncidium cucullatum, O. Marshallianum, O. Rogersi, and O. undulatum make their growth here; O. Phalænopsis is in bloom, hanging to wires from the roof, and the pretty O. Limminghei in a similar position is doing well. Nanodes Medusæ close to the glass is equally at home.

In a long house having a north aspect are the Masdevallias, Trichosma suavis, Disa grandiflora in large pans, several of them containing as many as thirty flowering growths each. Odontoglossum Rossi majus, and the pretty Butterwort, Pinguicula caudata. In the Gardenia house Mr. Whillans is experimenting with Cattleya citrina, to endeavour to make a quick and early growth, to be succeeded by a long and cooler rest. Great masses of Dendrobium Falconeri are still in this heat, a D. bigibbum, D. Dearei, and D. Wardianum have grown and are flowering well.

It is a treat to see the scores of hanging baskets laden with bloom of the pretty little yellow Oncidium cheirophorum; in another house with hundreds of flowers on, the useful old Cypripedium insigne, and in another the sweet-scented O. ornithorhynchum, Sophronitis coccinea, and S. grandiflora, the former of a brick-red colour with shorter pseudo-bulbs and smaller blooms than the latter, which is orange scarlet, some of the blooms measuring 2½ inches across.

The Lælia house is also gay. There are about a hundred spikes of L. anceps; two large plants of the alba variety have seven strong spikes, these are much thicker than any of the other forms. L. harpophylla can be counted in the three figures, and a fine stock of Odontoglossum Harryanum occupies one corner; some have bloomed, and others are showing.

Dendrobiums at rest are in a light airy house. D. Jamesianum is flowering on well-ripened growths, and specimens of the same species as those in the Gardenia house mentioned, and others will yield plenty of flowers for cutting in their respective season. Most of these had been subjected to a sojourn in the open air last summer.

The Vanda, or East Indian house, contains a collection of good Orchids. V. Sanderiana is plentiful, growing in long boat-shaped baskets and rafts. A plant of V. Cathcarti has five leads, one being 8 feet long, and bore ten spikes of bloom at one time. Vanda Hookeriana is present in numbers. Aerides vandarum has eleven spikes; of A. Lawreneiæ there are good plants, and among others in bloom were Angræcum sesquipedale and A. Leonis.

An additional block of four houses was built last spring, each 116 feet in length, connected at each end by a wide corridor. The one on the south end is filled with Odontoglossum citrosmum, there being no stages in it. The whole of the plants, which are in baskets, are suspended near to the glass. The other one is used for resting Dendrobiums, and for Lapagerias, Roses, and Chrysanthemums.

The Odontoglossum house comes first, and I was informed that with O. Alexandræ, O. Pescatorei, and O. cirrhosum there are no less than 8000 plants, consequently there is always something in flower. Mr. Whillans has had all these, besides many others, repotted, since he took charge of the extensive gardens at Blenheim. They were formerly grown in roots of Polypodium vulgare, which is very abundant about the plantations, but he found on examination that Orchid roots below the surface had perished. They appeared to do well at first, but afterwards the Fern commenced growing at the expense of the Orchid, besides introducing a number of slugs and other insects. Nothing is used now but good peat and fresh sphagnum.

The other houses are filled with Bouvardias, &c., which I hope to note another time. But in a mixed stove I noticed healthy plants of Calanthe vestita gigantea with 100 spikes. This is much later and stronger than the other deciduous Calanthes. Phaius grandifolius was also sending up many strong spikes. It may be imagined that with forty-five men under his charge Mr. Whillans is obliged to depend a great deal upon responsible foremen in each department, and that each feels that responsibility there can be no doubt; and Mr. John Coles, who has charge of the one I am writing about, is entitled to a certain amount of credit for the pains he takes in the Orchid houses, and Mr. Whillans speaks well of him. The young men's comfort is looked to, for they have a splendid bothy, in an excellent position, fitted with every convenience, with a large kitchen, dining-room, and library, which certainly requires a few more good useful volumes, but as the place has not been completed very long they may yet be forthcoming.

I have only now to add my best thanks to Mr. and Mrs. Whillans for their kindness and hospitality, and to give, as my opinion, that the right man is in the right place.—G. W. CUMMINS.

LONDON'S LESSER OPEN SPACES—THEIR TREES AND PLANTS.

NEW SERIES.—No. 7.

PERHAPS it was for the sake of contrast between their dry pursuits and the freshness of Nature that the lawyers of the olden time surrounded their London quarters with gardens, often somewhat extensive, for it does not appear that they themselves were, like the monks, particularly fond of horticulture in any branch. Yet the precincts of the Temple to this day witness that a love of plants and flowers exists in some legal minds, for we see many pots arranged in odd nooks and corners. Window sills are also turned into miniature greenhouses. One window, indeed, has been curiously adorned by its owner, who has covered the panes with dried fronds of various Ferns stuck to the glass, amongst them here and there a flattened body of a moth or butterfly. Evergreens have long been a speciality of the Temple. The poet Cowper tells of his experiences in trying to keep Myrtles alive at his chambers, and advises a friend to change the earth about October, and water regularly twice a week through the winter. But Myrtles will not thrive in London's smokier gardens. Still, it is surprising how little some evergreens, chiefly those with large leaves, seem to suffer from it, not even if the leaves during the winter are so coated with soot that their texture cannot be seen. Perhaps to some extent this carbon deposit acts as a preservative from the cold, and if well syringed off with tepid water in spring leaves no evil effects afterwards.

The Temple Gardens are not likely to be forgotten as long as English literature endures, for many are the allusions made to them by famous writers. All students of Shakespeare will remember the scene he lays in these gardens, where the rivalry between the Yorkists and Lancastrians is represented as starting from the plucking of red and white Roses by some of their partisans, who took this flower for symbols. And indeed it is probable that the gardens had during the fifteenth century a profusion of Roses, and they grew there for centuries, till the smoke-laden air forbade even the strong Perpetuals to put forth blooms. The last to struggle for existence were the old Provence Rose, the Cabbage, and Maiden's Blush. Then there came a turn for the better owing to Smoke Prevention Acts, and Mr. Broome could show in 1864 some twenty trusses of Temple Roses. The continued growth of London, however, has not been favourable for this plant. About the Temple we still find that pleasant quietude on which Charles Lamb and Miss Landon have commented—so different to the streets outside and the Embankment below. Of course the gardens are less picturesque now than when the Thames crept up to their edge, forming a little bay. But in the summer season, by the kindness of the Benchers, many poor persons are much benefited by the privilege allowed them of strolling here, and perhaps eventually the gardens may be opened to the public daily.

The Temple Gardens now existing must be about five acres in size, and they are named from the Middle and the Inner Temple. There may have been formerly a garden attached to the Outer Temple, if so, it has been built over. In the upper square or terrace of the Middle Temple Garden the memorable fountain still throws up its spray, but the jet is now of diminished height to what it was, according to tradition, in the olden time. It is under the shade of some trees, the notable ones being two well grown. Descending to the larger space below, we see no signs of the shady recesses or bowers which, in the eighteenth century, attracted meditative authors, but there is a broad lawn, edged by some Planes and young Limes, and over which are scattered flower beds of shapes somewhat singular, bare in February, but which receive plants for a summer display. Vases and boxes show some of the spring bulbs, to which the N.E. winds have been unkindly of late. As this garden had the repute of being the most retired, it was probably here that the rooks had their settlement, oft referred to. The commencement of the colony was said to have been a few birds, brought hither from Woodcote Green, Epsom. Of the one or more Catalpa trees planted in Stuart times there is no relic left, and not a Fig tree has survived to our day of those that had flourished and borne fruit. There are some venerable evergreens, but the Hollies have fared badly, and also the Rhododendrons (which very possibly used to flower years ago, when more vigorous). Aucubas, Portugal Laurels, and Thujas, however, have strong shoots, fairly leafy. Along the borders one may notice Pinks, Irises, and Chrysanthemums, and amongst them annuals are sown with variable success. Mignonette is one of these that has for years been a favourite flower in both gardens; it may advantageously be allowed to sow itself, and from observation I do not think sparrows are such destroyers of seeds in town gardens as some suppose, but the Temple has ever been a rare haunt of these birds. Leigh Hunt declared he saw them by thousands, and in the accounts appears a disbursement, while Barrington was treasurer, of a pound for poison to thin their numbers, which was rather a severe measure.

Of the Inner Temple garden there is an old engraving dated 1671, one of the few that exist representing the gardens of our ancestors. It enables us to mark the places where trees then stood. It is likely these were chiefly Elms and Poplars. The last to survive of these venerable trees was a Sycamore, for many years carefully propped up and Ivy-clad, beneath which Johnson and Goldsmith are said to have sat in talk. About that date it was usual for the leading counsel to promenade the gardens on summer evenings, habited in their satin smalls, with stockings, ruffles, and cocked hats, and they would stoop over the borders to admire the "Sweet Williams," the "London Prides," Stocks, Larkspurs, Wallflowers, and other old favourites, which are still cultivated here, but outshone by the Chrysanthemums, which are now the specialty of the Temple. These have been oft described in their annual display. Of course, all the choicer varieties are grown under cover, though there are some that will bloom in the open pretty freely, the best position for them being a bend of the grounds towards the east, where the gales of spring and autumn touch the plants lightly. Some shelter is afforded by evergreens, which might be more extensively planted on the Embankment side of the gardens. I perceive it is now becoming common to set Golden Feather abundantly along the borders of London gardens; it has the advantage of looking green and fresh most winters.

The enclosure of Clifford's Inn upon the north side of Fleet Street is an example of a town garden, which thousands pass near daily, unconscious of its existence. Being so enclosed by buildings, it is not favourable for the growth of trees and many plants, but it might be greatly improved, and the Public Gardens Association are endeavouring to have it thrown open to the public. The square space is sub-divided into four lesser squares, on their sides scattered Planes, Elders, and Laburnums. The ground, however, is so impoverished that the few herbaceous plants look feeble; the most vigorous growth noticeable was that of a bank of Ivy.—J. R. S. C.

CULTURE OF FREESIAS.

YOUR correspondent "J. C. A." has done well in directing attention to these charming Cape bulbs at page 65. Few semi-hardy bulbous plants are more delightfully fragrant than these. They possess a perfume peculiarly their own, and cannot be too strongly recommended as especially valuable for cultivation in all gardens where choice fragrant flowers are appreciated; and whether for personal adornment, dinner table, or vase decoration, their characteristic beauty and exquisite perfume can hardly be overrated, the more so, as already pointed out by the writer above referred to, they may be had in succession for a long period. I suppose that "J. C. A." has special use for these flowers in November by potting his bulbs as early as June, which I may remark is an extremely early date, and very much before the time that they can be procured from our largest bulb growers and importers. From November onward to Christmas too there is such a wealth of Chrysanthemum blooms, tree Carnations, Cyclamens, and such flowers that I have regarded the Freesias as of greater value when the former are on the wane. This is, however, no reason why these charming flowers should not be among their number, and my reason for calling attention to them is that those who may wish to take them in hand for the first time may not be disappointed in their endeavours to obtain them so early from the bulb merchants, who usually receive them from August to the end of the year. Not infrequently do consignments come to hand even in January, the bulbs as plump and sound as ever, and these when potted will start readily in about three weeks in a temperature of about 50°, and if grown in this continuously will flower at the end of April. With a view to protecting their frail growths I always prefer a frame for them, where they may be protected from heavy rains or destructive hailstorms. At all times overwatering should be studiously avoided. A thorough baking in full sun and without water near them is essential to their success, which may be secured by placing them on a shelf near the glass.

My experience of Freesias, however, will not allow my endorsing the statement that "a single pot will frequently treble its produce of flowering bulbs in one year," and I doubt if growers generally will be able to give so highly satisfactory an account of the rapid increase of their stock. I willingly admit they can be rapidly increased by offsets, but the statement that they frequently treble themselves in one year, and flowering bulbs too, is something I had never heard or even dreamt of. One instance alone while writing occurs to me of any plant doing so much, and this is Gladiolus Colvillei The Bride. Frequently this trebles its produce of flowering corms in one season, but it is purely the result of extra large corms, and good culture, fully protected from spring frosts. In this case the corm is but annual, which may to some extent account for its prolific reproduction, and I do not know of any strictly perennial bulb increasing so freely. Numbers of bulbs, as Lachenalias, Erythroniums, Muscaris, Alliums, and some Scillas, increase at a surprising rate, but do not make flowering bulbs for two years even with good culture. The Freesias in general appearance resemble the Erythroniums, the offsets being disposed similarly in both genera, and I have never yet seen a flowering bulb produced as a one year's offset upon either; on the contrary, I have had some hundreds of medium-sized Freesias which never produced an offset at all. From time to time I have had various inquiries from amateur growers of these bulbs who complain that they do not come up the second year. This is a sure sign of not being properly ripened, and to all those who have a similar experience it cannot be too strongly urged that a thorough baking in full sun, regardless of how hot or dry the soil becomes in consequence, is most essential to their success, not, however, brought about too suddenly, but gradually and thoroughly.—J. H. E.

SELF-IMPROVEMENT.

THE opinions and the discussion on this subject, now appearing in the *Journal of Horticulture*, are worthy of the attention and consideration of all who are interested in horticulture—to young gardeners they are specially applicable.

The importance of this question will hardly need an confirmation which I can give, for anyone will comprehend that a knowledge of the higher subjects relating to gardening is of immense advantage

individually, as well as to horticulture generally, for by this means many of the secrets of plant life may be discovered, increasing our knowledge, and opening fresh paths to pursue the course onward. Knowledge being the key which unlocks the "Golden Door" leading to success, the acquiring of it should be the aim of everybody. The mere rudiments of elementary education are not always sufficient for the particular profession one may be following, but they are indispensable in the first instance. If to excel and get to the front be the ambition of a young man, something higher and extra must be sought for and found.

It is an indisputable fact that the facilities possessed by the young men of the present day are in every respect greater than those the head gardeners of to-day were blest with. Nowadays a good education can be procured at a comparatively small cost.

Among the subjects which are so eminently useful botany holds a foremost place. A study of the classification and structure of plants and flowers, besides being a pleasant pursuit, is also instructive, and helps the gardener in the culture thereof, though be it understood botany is not indispensable to a gardener. The most useful language is unquestionably French. So many names of flowers, especially continental varieties, are written in French that a knowledge of this language stands one in good stead. Thus, when an employer, or it may be a visitor, desires the name and meaning of a plant, it places one in an uncomfortable position if only a literal pronunciation can be rendered, at the same time being altogether ignorant of its meaning. Phonetic shorthand, as was forcibly pointed out by one of your correspondents, is very valuable, and whoever is proficient in the "winged art" must be justly proud of the achievement, for the opportunities to use it are endless, and it saves much tedious handwriting. Latin and geometry merit mention here, the first being so extensively used in the nomenclature of plants, a strong recommendation to acquire it may be given.

Having mentioned these subjects the next question is, How are they to be learnt, and what are the facilities for acquiring them? Schools of horticulture are wanting, a deficiency which will be felt more as time rolls on; so self-reliance must be depended on, and he who perseveres will in the end attain success. Near our large towns, classes for any subject may be attended. Some young men are indifferent to, and ridicule the notion of, anything beyond the practical part of their work; some again have no ability or talent, and others who have the talent, with a desire to progress, have no facilities for doing so.

Further, it should be the resolve to start early in life to acquire these subjects, as the inclination will gradually decline as the years roll on, and even were this not the case, so little time can be spared for this purpose that it would be almost useless to commence. It is not the rule with employers, or even head gardeners, when engaging their young men to inquire how far their knowledge extends. If it was the rule, they would bestir themselves more than is the case now, so that a better standard of gardeners would be the result. As a body gardeners are on an equal with any class in the kingdom for intelligence and intellectual capacity, but there is room for improvement. Now, it is not said in these notes that the technical part of horticulture as mentioned above is indispensable to a gardener, or even necessary when commencing a career in this profession; but it is said, and will be maintained, that the advantages to be derived are many, and will tend to place horticulture in still higher position than it now holds.—F. R. S.

[We have several communications on this subject, some of which will be inserted.]

THE BULB MITE.

In the Journal for February 23rd, page 152, "Observer" asks a few plain questions respecting the above, and the Eucharis being a general favourite in most gardens, I am not surprised its treatment is so often discussed, particularly as the plant so often fails to grow satisfactorily.

During the last few years I have carefully studied this matter, having had to deal with a stock badly infested with the mite, and the plants had been in a bad state for some time; indeed, I was strongly advised to consign them to the fire and start with a fresh stock. On closely examining the plants I was not surprised to find them infested with the mite. The pots had scarcely any drainage, and what there was had been completely choked, a heavy pasty loam having been employed without anything to assist in making it porous, it was consequently full of worms and sodden with water. I resolved to start with this stock, and in less than twelve months I was proud to have under my charge thoroughly healthy plants, about 100 in all, with plenty of foliage and flowers. I am pleased to say they have remained in a healthy condition since (nearly four years), and we are scarcely ever without flowers in winter and summer.

In commencing I shook them out clean, thoroughly washing them in warm water, and cut back most of the roots close to the bulbs. I repotted them in 10, 8, and 6-inch pots, selecting the strongest bulbs for the largest pots. The soil previously prepared and warmed consisted of two parts fibrous loam, one part peat, a little thoroughly decayed manure and leaf mould, a plentiful supply of coarse silver sand, and finely broken crocks and charcoal, with a little soot thoroughly mixed. Water was withheld from the roots entirely for a month, except syringing twice a day, morning and afternoon, which we make a practice of doing all through the year. They were placed on the front stage of our Banana house, where they have remained since, never plunging them, but shading lightly in bright weather. I was soon satisfied they would get the better of the mite. As the pots became filled with roots liquid manure was applied at every third watering, made from cow manure and soot, with a change of weak guano water occasionally, and since we have used Wood & Son's liquid manure powder, which suits them extremely well; indeed, I consider this a fine stimulant for all softwooded plants. We repot them annually, carefully removing any old soil we can without damaging the roots.

Observer asks, Does the mite come in the compost in which the bulbs are potted? I do not think it does, but I am fully persuaded it is owing to some severe check the plants receive, and not till the plants become in an unhealthy state does it make its appearance, some of the causes of which are over-potting, imperfect drainage, unsuitable soil, overwatering, using icy cold water, injudicious uses of stimulants, or subjecting them to extreme temperatures, &c. Secondly, he asks, Is it possible by a judicious system of culture to arrest and stamp it out? I do not hesitate to answer in the affirmative.

I must confess I was not a little surprised to read your correspondent, Mr. A. Pettigrew's, remarks, page 102, when he states his plants require and receive a good watering three times a day during hot weather in summer, and a heavy watering every day through the winter. Most of our plants stand directly over hot-water pipes in rather a high temperature, and we only water when dry enough to receive it, which is certainly not oftener than once a day in the hottest weather. They are examined twice a day, but only those requiring water receive it. Care is taken to thoroughly soak them.

I entirely agree with your correspondents, "M. W." and Mr. A. Haggart, that it is safer to err on the side of giving too little than too much water, particularly when plants are not in a flourishing condition. —Edwin Beckett, *The Gardens, Aldenham House, Elstree.*

STRATAGEM PEA.

In reply to Mr. Murphy (page 149) I may state that the number of pods given—viz., forty to a plant, was the aggregate crop for the season, and I am certain I have not overstated the quantity. As to the number of peas in the pods, I know that eight to ten will be produced with good cultivation. I know an amateur who has grown Stratagem Peas with plenty of pods containing twelve peas each. About ½ lb. seed was sown in a 12 foot row, and the plants grown without any of the orthodox topping or thinning of pods. I have no doubt the distance at which I sowed the Peas might be disastrous in some soils poisoned with manure, and lacking the essential constituents necessary for building up a robust, sturdy, fruitful Pea plant, and possibly with the additional disadvantage of growing in a high walled garden without the benefit of a good breeze of wind to consolidate the growth. On the windy uplands of Kilmalcolm they do as well sown thickly as described, when supplied with the required stimulants, as they do in other places with four times the distance between them, while being free from mildew and every other ailment to which Peas are subject when grown in soil containing a gross accumulation of vegetable matter. As a preventive against ground vermin and mice I steep the peas in naphtha for twenty-four hours before sowing, and I find it also a remedy against the seed souring in the soil should very wet cold weather succeed the sowing of early Peas. Early Peas forwarded inside when planted out are cut down here in spite of all means taken to prevent it.—John Swan.

FRUIT PACKING.

Your correspondents, Mr. Tresder and "W. H.," referring to my criticism on Mr. Pettigrew's method of fruit packing, justly remark that it can be of no service unless my own ideas are more fully explained, which I will endeavour to do. Mr. Pettigrew advocates hay as a packing material, and spares no pains in describing his mode of using it, but unfortunately he does not say why he prefers it to paper shavings, as the latter in my opinion is preferable in all respects. What I was most struck with, however, was Mr. Pettigrew's system of Grape packing, described in page 8, as I maintain, without fear of contradiction, that nothing that touches the bloom of Grapes can protect it. Therefore, my mode of packing in order to secure the bloom on one side of the bunches is as follows. I have wooden boxes for the purpose partitioned, each space to contain two bunches, the partitions being made of various sizes, so that large and small bunches can be made equally secure in each division. I have a thick layer of paper shavings covering the same, and the partitions with wadding, thickening both materials to the sides of the box, so as to give the bed as much fall to the centre of the box as its depth and size of bunch will permit. The whole is then smoothly lined with tissue paper, and the box is ready to be taken to the vinery. The bunches as they are cut are tied at the stem with a string, and the bunch laid in the divisions, according to the size, best side up. Two holes are then bored in the side of the box, through which the string, is drawn and securely tied. A sheet of paper is then stretched over the partitions to protect the Grapes from dust, the lid then being made secure. I will venture to say, whether they have to travel both by land and water, if kept right side up, one side of the bunch at the journey's end will be looking almost as perfect as when they were cut from the Vines.

I also take exception to Mr. Pettigrew's mode of Peach packing. He recommends the use of two boxes, tin and wood. The former I do not find necessary. The box I use is made of wood divisioned in various sizes, suitable both for Peaches and Nectarines. Mr. Pettigrew also recommends rolling the Peaches in the packing materials, and dropping

them into the divisions; but I find a better plan is to first line the divisions with paper shavings and wadding; then place each fruit on square pieces of tissue paper sufficiently large to well envelope the fruit, then draw the four corners of the paper together and by them let each fruit down in the compartments, if necessary slightly drawing them up and down, so as to get them firmly seated. The four corners of the paper should then be spread over the fruit and the wadding, of which a liberal portion should have been laid over; the partitions should be lapped over and around the fruit, and in order to make it quite firm a small piece of wadding should be gently thrust into each corner of the compartment. In unpacking the first things to be removed are the corner pieces of wadding, the four corners of the paper being again brought together; the fruit is lifted by them out of the divisions, so that not a finger mark can be seen, which is so desirable to avoid, and can in no other way that I know be so successfully accomplished. I may also remark in the dispatch of fruit, should there be two or three boxes to be sent to the same address, I invariably find the fruit in better condition when tied together in one package than if travelling singly. —R. W.

THE NEWCASTLE-ON-TYNE SHOW.

YES, "Old Hand," I can do more than substantiate my former statements, that the most glaring instances of size being preferred to quality are to be found in the North, and justify my remarks by stating the stipulated rules of the schedule and particularising the favoured exhibits at the above Exhibition, where handsome prizes were offered for fifty dishes of fruit to be ripe and fit for table, to include the following:—Six sorts of Grapes, three of Melons, three of Nectarines, and two of Peaches; four of Plums, two of Figs, three of Cherries, two of Apricots, three each of Gooseberries and Currants, and eight varieties of Pears, with the like number of Apples. Thus we find we have forty-seven dishes stipulated, leaving three dishes to the option of the exhibitors, which are required to be distinct. The numbers of fruits in each dish were also given, yet we find the first prize awarded to a collection not only deficient in the stipulated dishes, but containing at least one-third of unripe coarse fruits and some dishes that never would be fit for table, as the following particulars will show:—One dish or peck of Tomatoes, one of unripe Citrons, one of Lemons, six dishes of unripe Pears, seven dishes of unripe Apples (mostly culinary varieties), two dishes of unripe Plums, and one dish of Cycas fruits. The second prize collection was equally faulty, containing as it did two dishes or pecks of Tomatoes, one dish of green Bananas, one of unripe Citrons, six of unripe Pears, and the like number of unripe Apples (mostly culinary sorts). If "Old Hand" can get a couple of conscientious, disinterested, practical gardeners to say in plain English that the awards were justly made and in accordance with the stipulated conditions of the schedule, it would strengthen his case much more than any reference to the Judges, as they would naturally uphold their former awards. Nevertheless, it would do no harm to know who the gentlemen are that officiated as Judges. Are they some noted *chefs?* as some allusion is made by "Old Hand" to different ways of eating fruit other than from the trees. Suppose we grant him the assistance of a *chef* to make his exhibits eatable, they could not rightly be termed dessert fruit, as cooked fruits are always under the heading of sweets in a *menû* for a dinner. I have seen many skilful feats in cookery, but it would confound the cleverest *chef* to convert Cycas pods into an eatable delicacy of any sort.

With regard to Tomatoes, to say the best of them, they are certainly an injudicious innovation amongst fruit at our exhibitions, and ought not to be admitted as fruit and passed over at convenience; it is nothing less than an injustice that I am anxious to abolish. Personally, "Old Hand," I am anxious to give honour where it is due, but where is the honour in violated treaties? If anyone can lay claim to honour it is the Committee for their spirited enterprise, and I am glad they are so well rewarded.

"Old Hand" seems somewhat alarmed at my position, but I can assure him that I can still find comfort in the fact that I am the only exhibitor that staged fifty dishes of ripe fruit, and I can well afford to ignore his insinuations.—J. H. GOODACRE.

FOR several weeks past I have watched with great interest the correspondence with reference to the awarding of prizes in the Jubilee fruit competition at Newcastle-on-Tyne. The name of Mr. Goodacre is familiar enough as a successful exhibitor throughout England, but in this instance he has certainly showed very bad taste in challenging the judging at a show, on the exhibits of which he should certainly not venture to give such a decided opinion, being an absentee from the said Show, and, therefore, he must have received his information from others. Of the superiority of the premier collections over his own, no one would have been more convinced than himself had he seen them. If Mr. McIndoe, who is well known to be one of the finest fruit growers in the kingdom, and who took second prize, had in any way complained it would not have been so surprising, as the difference in merit between his and the premier collection was trifling in comparison with the difference of the first and second prize money. There was a marked difference between these two and Mr. Goodacre's collection, so marked that had these been disqualified Mr. Goodacre would even then have only been justified to receive the award he did for a prize of such value. Seeing that the Committee offered such a magnificent prize as fifty guineas for the Jubilee collection of fruit, it must have been in the highest sense gratifying to the energetic and courteous Secretary, Mr. Gillespie, and his fellow workers, to see the unabated and general interest and attention these collections excited in the thronging crowd of visitors.—ONE OF THE JUDGES.



CHRYSANTHEMUM SHOWS.

WE have received notices of the following fixtures for the Shows of 1888:—

National Chrysanthemum Society, Metropolitan Shows, September 12th and 13th; November 7th and 8th; and January 9th and 10th, 1889.
Provincial Show at Sheffield, November 16th and 17th.
Kingston-on-Thames, November 6th and 7th.
Portsmouth, November 7th, 8th, and 9th.
Teddington, November 8th and 9th.
Southend, November 13th.
Brighton, November 13th and 14th.
Putney, November 13th and 14th.
Winchester, November 13th and 14th.
Reading, November 15th.
Pembroke, November 15th.
Lindfield (Sussex), November 15th and 16th.
Sheffield and West Riding, November 16th and 17th.
Liverpool, November 20th and 21st.
Birmingham, November 21st and 22nd.
Hull, November 22nd and 23rd.
Pontefract, November 23rd.

MRS. J. WRIGHT.

THIS variety appears to be both early and late. The finest blooms we have seen were too early for the November shows; and now Mr. J. W. Flight, who has obtained the first certificate for this variety, writes from Twyford, Winchester, under date of March 2nd, "I have still a bloom of Mrs. J. Wright in one of my rooms; it was cut six weeks ago, but, being kept in a cool place, it retains its form and looks quite fresh. I believe the demand for plants has been immense, and I do not know of any other variety that produces young growths so freely."

NATIONAL CHRYSANTHEMUM SOCIETY.

ON Monday, March 5th, the General Committee of the above Society met at Anderton's Hotel, Fleet Street, to receive the report of the Sub-Committee previously appointed to arrange for the shows and schedules of the present year. There was a large attendance of members, about forty being present, including the representatives of several affiliated societies, Mr. E. Sanderson presiding. The three delegates from the Sheffield and West Riding Chrysanthemum Society, Mr. W. K. Woodcock (Hon. Secretary), Mr. J. G. Newsham (Trustee), and Mr. T. B. Hague, the Sheffield Society's representative on the General Committee, were introduced to the meeting by Mr. William Holmes, and were very cordially received. They had held a conference with three members of the National Society's Sub-Committee in the afternoon with regard to the provincial show, and the final details were arranged to mutual satisfaction. Referring to this Mr. Holmes stated that the Sheffield officials had taken up the scheme so earnestly and in such a business-like manner that its success was practically ensured; a fund of £120 would be guaranteed which, with the National Society's contribution, would amount to at least £160, and there is a possibility that by local assistance it will exceed that sum. Mr. Woodcock in thanking the members for their hearty welcome, said that they had throughout the negotiations remarked the great fairness which had characterised the terms suggested by the National Society; he complimented Mr. Holmes highly upon his promptitude, energy, and tact, and observed that no efforts would be wanting on the part of their Society to render the show a thorough success. It was hoped that it would be rendered the best representative exhibition of north and south country productions that has yet been held. Mr. Newsham also responded in similar terms, fully endorsing all that Mr. Woodcock had said with regard to the interest that was already being excited in the show, and it was felt that the National Society would fully justify their title in undertaking a provincial exhibition.

After several new members had been elected, and some miscellaneous business transacted, the Committee proceeded to the examination of the schedules for the three metropolitan Shows, the dates of which have been already given. After considerable discussion the recommendations of the Sub-Committee were adopted, and the following Judges were appointed. September Show: Messrs. Dean, Gordon, Henshaw, and Drain. November Show; Messrs. Donald, Prickett, Barron, Douglas, Wright, Gordon, Molyneux, Beckett, Castle, and Head. January Show: Messrs. Dean and Gordon, with Mr. W. Holmes as referee at all the London Shows. At the provincial Show the Judges will be Messrs. Wright, Udale, Gordon, Garnett, Castle, and Dean, with a referee to be appointed by themselves. Numerous alterations were made in the classes at the metropolitan shows, several being added for amateurs, and

medals are offered as prizes in several classes, on the understanding that money can be had instead if desired.

This being the last meeting of the session, hearty votes of thanks were accorded to Mr. Sanderson and to Mr. Holmes, who responded in suitable terms.

LATE CHRYSANTHEMUM.

Mr. T. Winkworth, Childwall, Liverpool, sends us some fresh bright blooms of Chrysanthemums, and remarks that the varieties are "two latest flowering Chrysanthemums with which I am acquainted—namely, Ceres and Golden Gem. I scarcely need say they are terminal flowers from late-struck plants."

A PEEP AT PITCAIRLIE.

Pitcairlie, the residence of Robert Catheart, Esq., of Pitcairlie, and of Carbiston in Ayrshire, lies among the Ochils, midway between Auchtermuchty and Newburgh in Fife. The family is an old one, the wardship of Carbiston dating from 1368, in the reign of David II., and bears an honourable and honoured name in the service of their country. Captain Robert Catheart, R.N., of the "Bellerophon," played a distinguished part in the Battle of the Nile, and added to his fame in his subsequent career. In these peaceful times no proprietor holds his place more worthily, or discharges in "the kingdom of Fife," and beyond it, many important duties with more acceptance than the present well-known and highly respected laird of Pitcairlie. Of much that could be said in his praise, although no one would be less likely to thank the sayer of it, most suited to the columns of the Journal is the fact that it would not be easy to find a gentleman more interested in horticulture generally, or to meet with a more enthusiastic florist.

The mansion dates from different periods, the tower being over 400 years old. All around wood grows luxuriantly and is abundant, fine old trees meeting one everywhere. Special mention may be made of the Oak and the Limes in the immediate vicinity of the house. Near the keeper's lodge is a handsomely proportioned Silver Fir of great size, which is figured in Jeffrey's book of the famous trees of Fife and Kinross. Beside the walk leading to the garden stands a grand Elm. This last several years ago lost a huge limb, which somewhat impaired its symmetry, but it is still an enormous and splendid example of its kind. But, as usual in such fine old places, one does not realise the great size of the Pitcairlie trees from the proximity of so many noble specimens.

The grounds to the west of the mansion are laid out in well-kept terraces; on the south in the flower garden brilliant in the season with the best bedding plants. The walk referred to above winds through a shrubbery to the houses and garden. A broad border is filled with thousands of Polyanthuses and Primroses, especial favourites, affording when in bloom, as I had previously seen them, a sight to be remembered. The houses are numerous, and all in excellent condition. I can do little more than indicate these. There are in all five vineries. In the early and second house are grown mainly Black Hamburghs, with Madresfield Court, Buckland Sweetwater, Duke of Buccleuch, and one house is of Muscats alone. In the late house are Lady Downe's, Alicante, Gros Colman, Gros Maroc, and a large span-roofed vinery is devoted chiefly to Black Hamburghs. Inside the garden is also a large conservatory, which was filled with the usual greenhouse plants all capitally grown, many of them models, and in profuse bloom. Amid the fine display of Fuchsias, with Zonal Pelargoniums, Begonias, and other comparative novelties, were observable older flowers now not so often seen as they deserve, but which a judicious taste rightly refuses to discard. The whole effect of this house was very fine. Outside the garden are a smaller greenhouse, four Peach houses, Fig, Cucumber, and Melon and Tomato houses, with the usual frames heated and cold. The culture of Pines has been discontinued.

There is a Rose house, and here I make confession. Personally my knowledge of Vines is of the smallest, but a friend with me made up for that. We were being shown two of the vineries. Even I could see that the crop was one of uncommon excellence. The sturdy canes, the ample foliage, the bunches of fruit so numerous, so large, so uniform, told that, and I had my friend's repeated assurance that he had never seen anything to equal them. I overheard, during a minute inspection and a pretty lengthened discussion of their merits, strong expressions of surprise as to the age of some of these heavily laden Vines, and I let slip a golden opportunity of increasing my scanty Grape lore. But that Rose house did it. I had my hands full of Tea Roses, and the Grapes might then have been miles away. How these Pitcairlie Roses cling to one's memory! The house is in two divisions, and is filled with Teas of the best sorts, planted out in borders and trained on trellises up the glass and on the back wall. Of course Maréchal Niel is there, with Gloire de Dijon, Niphetos, Marie Van Houtte, Rubens, Duchess of Edinburgh, Souvenir d'un Ami, and all of worth. I never saw Cheshunt Hybrid in such perfection, and one plant of Souvenir d'un Ami, covering 9 or 10 feet square of the glass as you enter, was a mass of exquisite flowers, yet for months it had been constantly drawn upon. From it I carried to the neighbouring town some beautiful blooms, and there left them—shall I say not without reluctance?—to fulfil the function of their name. In the open about 500 Hybrid Perpetuals, including always the latest of merit are grown, and grown as everything at Pitcairlie is. The collection of herbaceous plants is very extensive. Dahlias in the different sorts were numerous and good. The collection of Auriculas, stage and Alpine, is one of the most complete I know, including all the best of the old sorts, and I believe every new variety obtainable. Mr. Catheart was one of the chief promoters of the Scottish Primula and Auricula Society, of which he was unanimously elected President.

I had almost omitted to mention that Pears, which did not give satisfaction in the garden, have been given up. The other sorts of fruit on the well-clad walls and throughout the garden are grown in abundance, the collection of Apples being especially choice, extensive and satisfactory. Such cases may be less rare than I imagine, but to me it was a new experience to see a heavy crop of Red Currants on a wall, and a fine break of Gooseberries still untouched at the beginning of October.

The head gardener does high credit to a name of note in his profession. His father, the late Mr. John Laing, well known as one of the most successful Grape growers and exhibitors of his time, for forty-nine years held the same position at Pitcairlie, and at his death in 1883, Andrew, who had been trained under him, was called from England where he had served for several years to fill his place. I may mention that at Wellfield, five miles to the west, Mr. Robert Laing, brother of the late gardener of Pitcairlie, has lately retired to enjoy, I hope for many years, the considerate beneficence of the family he has served so long and faithfully. He also is succeeded by his son. Such facts, creditable alike to employer and employed, need no comment. In concluding this sketch, too imperfect, but which someone better able may yet amplify, let me add that the pleasant recollection of my visit to Pitcairlie is owing not more to the excellence of everything to be seen there than to the genial courtesy and the warm hospitality of its owner.—A Northern Amateur.

EUCHARIS CULTURE.

My thanks are due to Mr. Pettigrew for the very lucid way in which he has, "in answer to my request," described the house, position, and heat in which the Eucharises are grown at Cardiff Castle. He says he has no difficulty whatever in keeping the temperature of this house up to 70°, except in severe weather, when it may be allowed to fall to 60°, while we have to be content with a temperature during winter of 60°, falling during severe weather below 50°. Such being the case your readers will see at a glance the advisability of our plants being kept very much drier than those under his charge; the conditions being so different, the treatment, as a matter of course, must differ also. Had we the position and heat that Mr. Pettigrew has at his command very probably our treatment would vary; but for plants growing in a temperature at least 10° colder than his are would he recommend giving them as much water as his are having three times a day during summer and a heavy watering every day during winter? Ours receive water about three times a week in summer, and during winter once a fortnight, the temperature of the water being always about 80°. Mr. Pettigrew is surprised at the regularity with which our Eucharises flower three and four times a year. Perhaps the dry treatment is the cause of their flowering so often. No doubt his plants flower with greater abundance, but not so often as ours.

The point at issue, in my opinion, is the quantity of water required to keep Eucharises in a healthy flower-producing condition under different temperatures. With a minimum of 70° they, according to Mr. Pettigrew, will require a greater quantity of water, but with a minimum under 60° we maintain it is wise treatment to keep them very much drier than recommended by Mr. Pettigrew, and I shall be very glad to hear what are his views on this point. As I am afraid there are more gardeners who have a limited supply of heat than otherwise who are expected to grow and flower Eucharises, I hope they will be careful how they read articles on Eucharis culture, and not give plenty of water unless this can be supplemented by plenty of heat.—A. Haggart.



KITCHEN GARDEN.

A Late Spring.—Many are already predicting this, and the weather in February encourages this impression. It has been the most severe February experienced for many years It is not, however, a genial February that brings forward early vegetables. Neither does March influence them much, but a good April and a fine May are most important. We therefore feel little concern as yet about the weather, and advise open-air operations to be delayed, but as much as possible should be pushed forward under protection, and if good supplies of young plants are ready for turning out when the weather becomes favourable the results will be far more satisfactory than are obtainable by early planting and sowing in unfavourable weather in the open.

Peas for Planting Out.—Our December-sown Peas are at a standstill. They are later than usual, and our first crop will now be secured from plants sown under protection. Many attempts are made to raise Peas in this way, but they are not all successful. A common cause of failure is sowing too early and raising them in too much heat. Peas raised under protection cannot be planted out with safety until the first week in April, and if the seed is sown in the second week in March the plants will be from 4 inches to 6 inches high in three or

four weeks at most. This is a suitable height, and if upright and sturdy they will grow away much more freely than if raised in January or February and grown under protection until a foot or more in height and spindly. Where 3-inch pots are plentiful the seed may he sown in them. Half fill the pots with rich soil, make this firm, then place ten or twelve seeds on it, and fill up with more soil. Place them in a temperature of 65°, keep them near the glass when the leaves begin to show, give water and air freely, and by April each pot will be full of roots and good robust plants to turn out and place at a distance of 10 inches or 1 foot apart. We have never any failure with our indoor-raised Peas if treated in this way, and they never receive a check at planting time in either root or branch, and this is greatly in their favour. Peas may also be raised in turves and troughs, but the pots are most convenient.

KIDNEY BEANS.—These are amongst the most valuable of all early vegetables. Their culture is easy, and wherever there is any prospect of vegetables being scarce in April or May they should be sown largely. They will now fruit in seven weeks after sowing. There is no better way of treating them than to sow the seed in small pots and transfer them into 8-inch or 9-inch pots to fruit. They will germinate in a few days in a temperature of 65° or 70°, and they will succeed in this heat always. Our earliest sown plants are now in pod, and all plants coming into bloom should have plenty of liquid manure at the roots, but do not syringe them during the time they are in flower. They are apt when gaining maturity to be affected with red spider, and if grown in a vinery or Peach house then they will introduce this pest at a time it would do much harm, and it is better if the Beans can be kept away from anything that is liable to harbour the spider. Destroy all plants as soon as the pods have been secured, and fill every available corner with others, as they will be very acceptable on the table and command a high price in the markets.

FORCING SEAKALE IN THE OPEN.—In the autumn and about mid-winter it is only those who have forcing appliances that can readily secure Seakale, but now everyone who has roots may do so, as its culture in the open will be a success from this time. It may be secured in two ways—one is quicker than the other. The quicker is to place some pots over the roots as they grow in the ground and pack a quantity of hot manure round the outside to induce the crowns to push up. This they will very soon do at this season, and Seakale may be secured in three weeks from the time of covering it. Pots are very convenient, but casks and makeshifts will also serve the purpose so long as the manure is kept off the crowns and the young growths have room to develope. The other and more tedious way is to cover the crowns with finely sifted ashes to a depth of 1 foot or more and allow the growths to push up through this. The ashes do not force it in any way, but they blanch the stems beautifully, and of all ways of securing finely flavoured Seakale this is the best.

MINT.—Green Mint will soon be in demand, but it will be many weeks before it can be gathered in the open, and roots should be taken up, placed in any old shallow box, and transferred to some warm house. It will be green in a fortnight if grown in a temperature of 65°. We have sometimes secured abundance of Mint in spring by lifting a good turf of roots and laying them down on the inside border of an early vinery. If covered with a little leaf soil a Mint bed will soon be formed.

YOUNG VEGETABLES.—The Cauliflower, Leeks, Lettuce, and Celery plants are growing apace under glass. We shall have a fine supply of them to turn out when the weather warrants us in doing so. This style of rearing plants should have much attention, but on no account try to "make them large all at once." They will not keep it up when taken from the protectors, and failure will be the result. Transplant them into boxes or frames in good time, keep them near the glass, and they are sure to succeed. Where they are now in cold frames protect them from frost at night, but expose them to the light and sun during the day. Protect early Potatoes in frames securely. They are very easily injured by the slightest frost, and if once checked they will never be so good afterwards. Where Radishes in frames are very close together and a mass of leaves, thin them out carefully that all that are left may have the opportunity of bulbing. Pull the weeds from early Carrot frames, and thin the plants where necessary. We are protecting ours nightly, but the mats are off during the day, and very often a little ventilation is given from 11 A.M. to 2 P.M.

FRUIT FORCING.

VINES.—*Early Vines in Pots.*—These must sustain no check through dryness at the roots, affording liquid manure liberally, surfacing the soil with rich material, and if the roots extend beyond the pots feed them there as well. Secure a good moisture by damping available surfaces in the morning and early afternoon, also before nightfall, maintaining a night temperature of 65°, 70° to 75° by day, and 80° to 85° with sun heat. Admit a little air at 75°, allowing the temperature to rise with sun heat, and close sufficiently early to keep it at 85° or 90°. When the Grapes begin colouring still continue the atmospheric moisture and feed liberally, as the fruit swells considerably after commencing to colour, and to enhance the quality maintain the temperature named with sufficient ventilation constantly to insure a circulation of air.

Houses Started in December.—Vines started early in that month will have the fruit thinned and swelling freely. The border must not lack moisture, which should be applied at a temperature of 80° to 85°, liquid manure materially assisting in swelling the berries. It will be a material advantage to mulch the border with some short but rather fresh manure, or a few fresh horse droppings sprinkled on the surface occasionally will afford much benefit to the foliage and the roots. Maintain a genial condition of the atmosphere by damping in the morning and at closing time or early in the afternoon. Ventilate early, but not before 70° to 75° is reached, securing with increased ventilation and sun heat a temperature of 80° to 85°, closing between those figures so as to husband the sun heat. At night 60° to 65° is suitable, and 70° to 75° by day artificially.

Vines Started in January.—The Vines are only just in flower, having been retarded by the severe weather. Secure a night temperature of 65° to 70°, 5° more for Muscats, 70° to 75° by day artificially, and 80° to 85° with sun heat. Maintain a moderately dry condition of the atmosphere, ventilating a little constantly. Fertilise all shy setting varieties carefully. Early Vines in many places have not made satisfactory progress this year, especially those with the roots in cold borders which have not been covered with fermenting materials. Some Vines started tardily, and the bunches show a tendency to blindness, some of them running to tendrils and others not advaning freely. Under such circumstances a slight increase of temperature and a reduced supply of moisture for a short time may be beneficial. Bright sunny days with sharp winds may now be expected. Avoid sudden changes of temperature, and admit air in small quantities at a time.

Vines Started Early in February.—Where breaking into growth freely these will require attention in disbudding and regulating, stopping them two to four joints beyond the bunches according to the space. Stop the laterals up to the fruit at one joint, or remove them altogether except from the two lowest leaves; those above the bunches may be allowed to make two or more joints before being pinched, but no more foliage should be encouraged than can have full exposure to light. Remove all superfluous bunches, also ill-shaped bunches of the free-setting varieties as soon as those that are the most promising for the crop can be determined. Raise the temperature to 60° at night, 65° by day from fire heat, and up to 75° to 80° with sun heat.

Vines to Afford Fruit in August and September.—Start the houses intended for the purpose named. Render inside borders thoroughly moist by the application of liquid manure or water at a temperature of 80°. It will in some degree stimulate the roots and compensate for the lack of fermenting materials to outside borders which can do little good after this. The atmosphere should be kept moist by damping the rods and every available surface two or three times a day, 50° being a sufficiently high night temperature, and 65° by day with sun.

Late Varieties.—We again urge the importance—rather necessity—of starting all the thick-skinned varieties without delay, as a longer period of growth is mostly all that is needed to produce good-sized and highly finished fruit, and such as possess good keeping qualities. Syringe the rods several times a day, maintaining a moist atmosphere by damping the borders every evening. It is advantageous to cover the inside border with fresh stable manure, the straw being shaken out, the ammonia given off having an invigorating tendency. Night temperature 50° to 55°, day 55° to 60°, and 10° to 15° more with sun, and rather free ventilation from 65°.

Vines from Eyes.—Those inserted as before advised and alluded to in our last calendar, are now well rooted and advancing, and should be shifted as soon as the roots reach the sides of the pots into 6 inch size, placing them on shelves over the hot-water pipes in preference to plunging them in bottom heat. Syringe well amongst them, and pinch the laterals at the first leaf unless they are intended for planting out this season, when the laterals may be left intact.

Cut-backs.—Vines for fruiting in pots next season will now be fit for reducing, repotting in the same size, 7 or 9-inch, from which they can, when established, be transferred to 12 or 13-inch pots. If these, or the eyes named in the preceeding paragraph, have been plunged in bottom heat, they may be returned to it for a time, 75° to 80° being suitable, but otherwise bottom heat is not necessary. Keep them close and moderately moist until they are established. Train the canes near the glass, as they cannot have too much light, it being important that the growth be solidified as it is made. Turfy loam rather rough with a fifteenth part of crushed bones, form a suitable compost for Vines in pots. Clean pots, and efficient drainage of clean crocks, must always be employed in Vine culture.

FIGS.—*Planted-out Trees Started Early in the Year.*—Attention must be given to disbudding and stopping, removing all the overcrowded shoots, stopping those intended to form well developed spurs for the second crop at the fifth or sixth joint, the leading shoots where there is space being allowed to extend, as they invariably afford the finest fruit. Water the borders freely with liquid manure at 80°, taking care not to apply it too strong, and mulch with rich compost, which will attract the roots to the surface. Encourage also the emission of roots from the stem by placing fibrous pieces of turf and partially decayed manure in contact with it; and by extending the material outwards a quantity of feeders will be secured, which, if supplied with warm liquid manure, will greatly assist the maturity of the fruit.

STRAWBERRIES IN POTS.—La Grosse Sucrée as usual is affording the best fruits, one fruit weighing more than three of Vicomtesse Hericart de Thury, but the crop is not so good, though the weight per plant is not materially different. Perhaps there is no prettier fruit for jellies than Vicomtesse Hericart de Thury, and when the fruit is well thinned it is of fair size. All plants will now be in a position for advancement by gentle forcing, or if not they should be brought under glass without further delay. Some may be advanced by placing them

in houses where there is gentle heat, and others may be placed in cool houses where they will come on gradually. In all cases it is necessary to examine the drainage, removing any moss or other matter from the surface of the soil, and wash the pots, surfacing with horse droppings rubbed through a sieve, which prevents the soil leaving the sides of the pots and encourages action at the surface. Until the trusses are showing it is well if the temperature does not exceed 50° by artificial means, and between that and the flowering and setting 55° is safe, advancing to 65° by day with free ventilation. The Strawberry also likes plenty of light until the fruits are set, but afterwards they are apt to become dried, hence they swell best in positions where the sun's rays are not so strong at midday. After the fruit is set and swelling a temperature of 60° to 65° at night, 70° to 75° by day (with an advance from sun heat to 80°, 85°, or 90°) is necessary, affording copious supplies of water and liquid manure until the fruit shows indications of ripening, when a somewhat drier and more airy atmosphere with diminished supplies of moisture at the roots will afford large well-swelled fruit of good flavour. Thinning the fruit must be attended to as soon as the setting is completed, removing the smallest and deformed fruit; and on no account must there be insufficient water at the roots during the swelling, but during flowering the soil must be kept moist, avoiding extremes either way. The chief object in Strawberry forcing is to secure an early and unbroken supply until those in the open ground come in, and this where there is a number of houses started at intervals will admit of its being done without much trouble or change of plants, whilst in others some tact will be necessary to meet the requirements.

PLANT HOUSES.

Tree Carnations.—To obtain plants for flowering next autumn and winter cuttings should be inserted at once. To insure their striking with certainty select short-jointed, sturdy growths from plants that have been in a cool, airy structure. Cuttings from plants that have been kept in a close atmosphere are almost certain to damp. Carnations root readily if the cuttings are good. They may either be inserted singly in sandy soil in small pots, or a number may be inserted together in larger pots or pans; in either case they should be covered with bell-glasses, or placed under handlights that can be rendered airtight. In making the cuttings a clean cut only is needed at the base, none of the foliage need be removed. Give a good watering after insertion, and plunge where gentle bottom heat can be given, and the temperature of the structure is not lower than 60° at night. When numerous cuttings are inserted together, pot them singly directly they are rooted, and grow them afterwards in the same temperature for a fortnight, then gradually harden them until they will bear cool treatment. In the process of hardening be careful not to check them.

Richardia æthiopica.—Where it is necessary to increase the stock of these for another year, all the small suckers may be carefully removed from the base. If possible, remove them with a portion of root attached. This cannot always be done without turning out the plants and carefully dividing them. With care, however, many can be taken with a portion of root. These, if inserted in small pots, will soon advance in a moist atmosphere and a temperature of 50° to 55°. When well rooted they can be placed into 6-inch pots and be grown perfectly cool until the end of May, when they can be planted outside. These plants will during the season attain an enormous strength and produce spathes of large size in early autumn. Plants raised by this means will flower long before old plants that are divided and planted out about the same time.

Imantophyllums.—Where these are grown for decoration in from 5 to 8-inch pots they should be repotted annually to keep them in presentable condition. If this is not done they become crowded with roots and lift themselves out of their pots. Potting should be done as the plants cease flowering, the whole of the soil being shaken from the roots, a few of the lower leaves being removed as well as the suckers. By the removal of a portion of foliage the plants can he potted lower, which adds to their appearance. If they possess too many roots to allow of this being done, a good portion of the lower ones may be removed. These plants are free rooting, and if all the roots are removed it does not appear to injure them in the least. If placed afterwards in a warm vinery they are not long before they commence rooting freely and growing vigorously. Keep plants that are being retarded in a cool house rather dry at their roots, or else the ends of the foliage will turn yellow and spoil the appearance of the plants. Injury to the tips of the leaves is a sure indication of too much water during their season of rest. These plants do well in fibry loam, one-seventh of manure, and land. The soil should be pressed firmly into the pots.

FLOWER GARDEN.

Clematises require good attention, or they soon become matted together and unsightly. Those that flower in May, June, and July, and which comprise the Florida and Patens types, to be thinned out and lightly shortened only, the bloom being produced from last season's wood. The Jackmanni and lanuginosa types are of very different habit, the bloom being principally formed on the current year's growths. Cut these freely back, or to within three or four joints of their last starting point. Honeysuckles, including the small Japanese variety, pay for thinning out and shortening back. Jasminum nudiflorum to be cut closely back after flowering, and the common Jessamine at once, the former flowering on ripened wood, and the latter on the newly formed growths. Forsythia viridissima is of the same habit as Jasminum nudiflorum, only later in flowering. Cut these back after flowering; also spur back Chimonanthus fragrans and the Pyrus japonica. Wistarias to be treated somewhat similarly to Pears. Spur back all long lateral growths, but do not touch the short spurs. Passifloras flower on the young growths, and in order to get plenty of these cut all last season's wood hard back to the main branches. Ivies ought to be kept closely trimmed in, or they soon become unsightly. The stronger growers, and especially the common Ivy, may well have all the old leaves as well as loose growths trimmed, the fresh foliage following being the most ornamental.

THE BEE-KEEPER.

NOTES ON BEES.

INTRODUCING A QUEEN.

After the deposition comes the still more important part, the introduction of a successor, and we must use every precaution that no harm comes to her afterwards. In order to make this intelligible it may be advisable to reproduce a few things in connection with queen introduction since the Ligurian bee was introduced. It will still be remembered by many how many failures there were in introducing Ligurian queens during the time Mr. Woodbury was at the head of bee affairs, and how, owing to that, he advised procuring stocks instead of queens alone. In a private letter from Mr. Woodbury he said, "The only sure method of introducing queens to strange bees is to deprive them of the power of raising a successor," an opinion I held from the first, as many years before I had a lesson to my loss by allowing a bee-master to kill the old queens (of the first hive I possessed) and to introduce the young queen without ceremony. Next spring my hives were queenless, and I was bee-less. According to later experiments, which I never saw fail, had he introduced the dead queen along with the living one the latter would have been safe.

Owing to the many failures to introduce alien queens to native bees cages were invented, and some precautions were taken to insure the safety of valuable queens. Pipe covers were called into requisition, and a Mauchline bee-keeper described a cage so as to cause the bees to fraternise with the queen, and so as to liberate her in a quiet manner. The description and uses of this cage which differs in no material way from the "Raynor," appeared in this Journal some time ago. Shortly after that appeared "A Stewarton Bee-keeper" gave similar instructions, but it was not until "A Renfrewshire Bee-keeper" took active steps and presented large numbers of these cages to bee-keeping friends that their utility became known. These cages were in use long before the Raynor cage was heard of. Good as these cages are, I never quite approved of them, being selfish a little of my own invention "The Safety Cage." It is used safely upon the top of the hive, the bee-keeper having at all times bees and queen under his eye, and from their appearance and conduct towards the queen know the time to liberate when she will be well received. "Felix" at page 34 speaks highly of "Alley's" queen cage on the grounds of it having a safe retreat for the queen against angry bees. Now my safety cage possesses a safe retreat against the most infuriated bees, while it is kept at a proper temperature on the top of the hive until the time of release, and if desirable she should be removed for a time, only requires to be lifted and put in the pocket or in a warm place. But while the queen has a safe retreat the cage has a large space covered with gauze, where many bees can fraternise, and if a bit of honeycomb is taken from the hive she is to be introduced to and put in the cage it will give the queen an odour more acceptable to the bees than anything else. Several of these cages were sent to the first Crystal Palace Bee and Honey Show along with the other intended exhibits, but like them shared the same fate—"exclusion."

After the cages many plans were tried to insure safe introduction. One person deprived the bees of their queen, then the moment the commotion commenced the bees were confined, the top of the hive was laid bare, and a cloth was thrown over it.

When the bees in this state had become frantic, the queen was introduced from under a corner of the cloth. After another minute's confinement the cloth was taken away and the hive covered, and when I saw the operator in 1863, he informed me that he never had a single failure. At the same date I deposed the queen, then after thirty to forty-eight hours, if I suspected she was roughly treated, I carried the hive within doors, after confining the bees, placing a bell-glass on the top where they could ascend. On finding their doorway closed against them a few minutes sufficed to pacify the bees, the hive was restored to its stand, and in the cases so treated I never had a failure. The most effectual plan, and the only one I would recommend where a valuable queen is at stake, is to remove the queen regnant, and at the end of eight days remove about midday every queen cell, then after a few hours place the queen in a safety cage, and in most cases she may be liberated shortly after sunset, the quietest time for bees during the whole twenty-four hours, but it is safer to let her remain in the cage for at least thirty hours. When alien queens are introduced into a hive containing eggs or larvæ there is a chance that royal cells may be raised and the newly introduced queen deposed, or she may be encased and so mutilated that she will be dethroned shortly after a seemingly safe introduction. I could give numerous cases of failure after every precaution had been taken, as well as numerous successes where queens had been introduced in the most reckless manner, but I will close with the following statements and queries concerning Simmins' method of direct introduction.

At page 74 "Felix" mentions four points in Simmins' plan necessary for safe introduction, but there is only one of these, No. 2, that is new—viz., "Confinement of queen alone and without food for thirty minutes previous to introduction." Will a shorter or longer time not suffice? What are the advantages gained by keeping her alone and without food? If it is for the purpose of removing any odour about the queen I fear that will not be effected, as keeping her fasting thirty minutes will not remove the odour, which is very strong and fixed. But if, on the other hand, the thirty minutes' fasting is the key to successful introduction without the discoverer knowing the occult influence therein, we must accept the discovery as it is given without asking questions or criticising in any way. For my own part I cannot boast of its success. In one case, where a queen with directions came from Mr. Simmins, the queen was at first well received, but afterwards encased. I obeyed the instructions given by Mr. Simmins to the letter, except in examining the hive an hour after the queen was introduced instead of forty-eight hours, which if I had not done, I fear if the queen was not killed she would have been mutilated, and so doomed to destruction at a time unsuitable to bees and bee-master. Notwithstanding my failure, I trust that Mr. Simmins will be able to remove my unbelief, and if so, no one will more readily accord him the praise due as a public benefactor, which, if successful in but nine cases out of ten, he will well deserve.—A Lanarkshire Bee-keeper.

IMPROVING BEES AND PROFITABLE BEE-KEEPING.

From time to time articles appear in the bee journals on this subject, setting forth the desirability of improving the races of bees, but everyone advises "judicious crossing" as the only proper way. Recently the *British Bee Journal* has had some elaborate articles on the matter, all of which indicate a hapless "groping in the dark." In this article I propose to consider the whole subject, for be it remembered all the races of bees in cultivation are really and truly wild ones, and probably bear the same relation to the coming bee that the wolf does to the sheep dog. I feel constrained to write this because I consider the present modes of rearing bees are those calculated to produce the opposite effect to what is desired. All wild animals seem pre-eminently designed by Nature to maintain their own existence. There is no question but that every animal, as well as every plant now used in the service of man, originated from wild progenitors. The beginning of all these things is so remote there is no tracing them. Certain it is the first breeders had no foreign blood to cross them with, and had to rely solely on feeding, selecting, training, and cultivating, as the only means—and a most powerful means, as all know who have well studied the subject.

Let us consider these points in connection with the improvement of bees. When they are left to themselves the old queen leads off the majority of the bees in the shape of a first swarm: the hive is depopulated, thus reducing the temperature with fewer bees to feed and attend to the young queens; therefore the successor is not improved. Some will say this is the way of Nature. Yes, but I know no instance where Nature steps in to do what she has designed man to do. Then there is nothing very "natural" about the modern frame hive and the crate of sections on the top when a swarm leaves. Let us just consider how queens are now reared by the host of breeders, all of whom claim to breed from "selected" stock, reared under the "swarming impulse." But every one of these cuts the cells out, and either hatches them in a nursery or nucleus; and I defy anyone to cut a cell out without chilling it. The natural temperature of a hive is from 96° to 98°, while outside it is rarely over 80° in the shade, oftener 60° to 65°. To chill a cell is to stop its development, often retarding the queen's hatching two days, or even more. To keep her in a nursery or nucleus is to further weaken her, bees being exactly like chickens—viz., they must be well "brooded" during the first days of their wing state. The point I am here contending for can be tested by anyone in the following way. Take a frame of new-laid eggs from some yellow queen and put it in a black stock to be developed. On the fifteenth day, or eighteen days from the eggs being laid, remove it and keep it out of the hive until it is quite cold—say for two hours with a temperature of 55°, then return it for the bees to hatch out. They will all do so, but not a yellow banded bee will be found in the hive twenty-one days hence, and few at seven days. The same results will follow if eggs from a black queen are treated the same way in a yellow-banded stock. This experiment is exactly the same as is followed by thousands of bee-keepers in manipulating their stocks, and then they wonder that their bees do not succeed better. It is also similar to the way most queens are reared—viz., the cells are cut out just at the critical moment. They are chilled before they can be grafted into another stock, hence there is a weak queen, one that is worse than worthless, as she is too often used for breeding purposes by her purchaser.

What we want in the "coming bee" is greater strength and greater vitality. If we succeed in getting these we shall find we have better honey-gatherers and much stronger stocks. We want our bees to be stronger on the wing and longer lived, also extra prolific, but not simply of extra size. We also want them as easy to manage as possible. In connection with this point the fiercer they are the better, so long as they can be easily and quickly handled without fear of attack.

For years I have closely studied this question, and by rearing queens from the egg in full stocks and never attempting to cut out the queen cells, I have reared some splendid queens in my time, which would keep 14 to 16 square feet of combs solid full of brood on both sides, yet it has been questioned lately in the *B. B. J.* if it is possible for queens to fill 10 square feet of comb with eggs. These queens when in full laying order were 2 inches long, but not very thick, and could run about as quickly as spiders. Their bees also were stronger, better honey gatherers, longer lived, resisted the winter better, and came out in the spring as strong as they were in the autumn, thus giving stocks capable of storing surplus honey from the early fruit blossoms.

These advantages were gained solely by breeding the queens well, but as it took a full month to rear and have such a queen laying, and often they did not lay for two months, such queens were very expensive. I have tried and thought of many plans by which I could get a multitude of queens from one stock. My "Hallamshire law" of direct queen introduction enabled me to calculate the time of the queen's hatching to the hour, but this did not give me the necessary "brooding" so essential to success. Then I thought of catching the old queen as she led off a first swarm, and with a few of the bees making a small swarm or nucleus, and returning the rest of the bees to await their swarming in eight or nine days in the nature of a cast. By this plan I should have several well-bred queens which, with a good proportion of the bees, could be formed into nuclei, cutting up the stock hive on purpose. The stock also could be much improved by breeding, and a number of virgin queens could also be had for distribution. This is a plan I can safely recommend to anyone who wishes to improve his stock. It is infinitely better than any "cell cutting" system, though I cannot see how a person rearing queens for sale can profitably employ it at the prices queens are now sold for. Two lots of queens from one mother would be as many as he would get in the season. Then there is watching for the swarms, and the risk of losing one, which, with other difficulties, would make the system impossible to him.

Early last spring I noticed that my stock of Punic bees showed signs of swarming, I opened it to prevent their doing so, when I noticed something peculiar. After carefully thinking the matter over I at once began experiments on a stock of Cyprians, the queen of which was an imported one. Judge of my delight at finding there was very much more to learn, that I could get hundreds of queens from one stock all reared from the egg, that the queens were first kept imprisoned and fed in their cells for two days or more, and when they hatched out they were not allowed to kill one another. Nor was this all; I could obtain a batch of such queens every week from one stock even while they had a reigning queen. I carried out the experiments during the whole season, rearing all kinds of queens, and so superior were they that after they began to lay I tossed them into the air, when they flew about as quickly as drones. This is safe to do with young queens just beginning to lay, as they recognise or remember their hive, and make for it, while

every queen reared in a nucleus, or the "cell cutting" and nursery systems, could not fly at all. This system of testing the queens I consider the most valuable of any, as all the muscles of the bee are in the thorax, to which both the legs and wings are attached, and by getting the queens weighted with eggs and noting their powers of flight we can judge very well as to what her offspring will be, and when a queen rearer is breeding hundreds of queens he can select the best to keep himself for stock. It will be seen that my theory for producing the coming bee is to breed for muscle, and I give the means of judging of it in the queen instead of waiting to see it in her offspring.

In the preceding I have not touched on cross-breeding. I would first of all improve the existing races. When we begin crossing we do not always have a blending of the two races, it is often more of one than another: often the cross shows traits belonging to neither of their first parents, termed sports. These, if good, by careful selection and breeding through several generations may be fixed, in which case we procure a new breed, but to secure all these we must have our drones quite under control. Some say we cannot do this. I think we can; at least, I have been able to do so for several years. The plan was picked up through a neighbour 200 yards off keeping Italians while I kept blacks. His young queens always mated with my black drones, while none of my queens mated with his drones. I begged a piece of drone brood from him and put it in one of my hives, and when the drones began flying my young queens mated with them, though black drones were much more numerous. This led me to study the physical geography between his apiary and mine, which has led me to form a certain theory on the matter, which I must further test before making public; this I hope to do on a pretty large scale in the coming season.

It will be seen from the preceding that we are on the eve of quite a new practice. Before long there will be men devoting their whole energies to the breeding and improvement of bees. Bee-keepers will send to them every spring for virgin queens. They could be sold, carriage paid, safe delivery and introduction guaranteed, by odd ones at 2s. 6d. each, bred and selected in the way I have described, and yield a good profit to the breeder. These the following season would be producing improved drones, perhaps long before any other drones were flying in the district: a nucleus could be made, and another virgin queen bought and given to it. When she began to lay the old queen could be dethroned, and the nucleus with the young one united to the old stock hive. Young queens rarely lay drone eggs or lead off a swarm in their first season: therefore the stock will always be strong, will never, or rarely, swarm, and will always have a young queen.

With well-bred queens at the price I have named it will pay no one to rear his own, and here it will be noted I have given a new name, "Swarming System," in which a young queen always heads the stock, and few or no drones are reared. Nearly all the other systems leave an old worn-out queen after the first season, or there is an enormous amount of manipulation, which, if valued at 6d. per hour, would leave no profit after deducting expenses; also no spare hive are required, and no bees will either have to be bought or sold in the fall.—A Hallamshire Bee-keeper.

TRADE CATALOGUES RECEIVED.

Chadborn, Coldwell, & Co., 223, Upper Thames Street, London.—*List of Lawn Mowers.*

J. J. Jensen & Co., 109, Fenchurch Street, London.—*Pamphlet and Price List of Guanos, &c.*

TO CORRESPONDENTS

*** All correspondence should be directed either to "The Editor" or to "The Publisher." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Books (*W. T.*).—You do not say whether you require a dictionary of botanical terms or a dictionary of plant names. If the former, Henslow's "Dictionary of Botanical Terms," published by Groombridge, price 4s., will suit you; and, if the latter, Johnson's "Cottage Gardeners' Dictionary," published at this office, price 7s. 6d., by post 8s. (*E. H. P.*).—Mr. B. S. Williams' "Select Ferns and Lycopods," published at Holloway, contains the information you require.

The Bulb Mite (*W. J.*).—The bulbs are seriously infested with the bulb mite, but there are also several other insects which seem to be similar to those often found in decaying vegetable matter. The cure is not hopeless, as you will see by Mr. Beckett's notes in another column.

Ferns and Beetles (*E. H.*).—We do not know a Fern which possesses the peculiarity mentioned by you, but we have sent your letter to an experienced grower, who may furnish some information on the subject.

Destroying Ants (*J. W. N.*).—Numerous modes of trapping and destroying ants have been described in this Journal, and you will find several letters from correspondents on this subject on page 147, February 24th, 1887.

Piping for Greenhouse (*A. B. C.*).—Your statement is insufficient. You do not even say whether the house is a span-roof or lean-to. Please give its height, length, and width, indicating the glass exposure; also repeat your question, and it shall be answered.

Cineraria Blooms (*H. C.*).—It is not necessary to publish your letter, as the remark alluded to had no reference to yourself. We are glad to recognise superior productions, and to give the growers credit for their work, but do not covet boxes filled with ordinary varieties sent with the object of advertising some wonderful "strain." A correspondent, "W. W." has sent us some trusses, but withholds his name, and we can only say they did not arrive in good condition, the flowers being much curled and withered through lack of damp packing material for keeping them fresh in transit.

Pruning Roses (*Novice*).—All that you can do to preserve the centre bud or main flower on the stem is to disbud. But this will not be needed to such a large extent if you prune closely the weak growths and leave the strong ones longer, say from 18 inches to 2 feet in length. These, if laid horizontally or pegged near the surface of the ground, will give you more than three times the quantity of Roses that you are now having under a moderately close system of pruning. When quality alone is the object aimed at, it can only be attained by close pruning and disbudding freely.

Asparagus plumosus (*J. C. Derry*).—The most certain method of propagation is the division of the crowns. This is best effected just before growth commences. Small pieces taken off with the roots attached are not long, if placed in a warm house, before they are established and growing freely. This variety flowers and sets its fruit freely when well established and grown under the influence of light and air. We have no doubt that the berries would germinate freely, although we have never raised young plants by this method. A. tenuissimus, which is not infrequently seen under the name of plumosus, may be increased by striking the upright growths.

Tomatoes, Cucumbers, and Melons under Vines (*E. J.*).—You cannot grow either of them satisfactorily under your Vines, which would shade them too much. Tomatoes require plenty of light and air, Melons full light, and although Cucumbers are benefited by slight shade the foliage of the Vines would prove too heavy for them to give you any satisfaction. You could ripen Tomatoes in pots under the Vines providing you had the fruit set in some other position where the plants enjoyed full sunshine with plenty of air. You could grow Adiantums and other Ferns successfully under your Vines. Richardias are referred to in another column, and a very simple and successful method of culture was described on page 167 last week; another equally simple and good awaits publication.

Protests at Shows (*Exhibitor*).—There is a clause in most schedules, and ought to be in all, to the effect that no protest can be entertained if not made in writing to the secretary by a stipulated time, say 2 or 3 P.M. on the day of the show, and while the judges are still in attendance to examine with the officials any class in which the awards are alleged to have been made erroneously. Judges are quite ready to do this, as it is quite immaterial to them to whom the prizes are awarded, their whole object being to do justice. It is useless and worse for exhibitors to enter objections to awards months after a show, because nothing can be altered then, but meetings are disturbed, and contentions often provoked where harmony ought to prevail. Those who act as described simply afford evidence of their own neglect of duty in not having objected to the awards at the proper time.

Various (*J. G.*).—The top 3 or 4 inches dug from a pasture or road side where grass grows closely and well, and stacked till the grass decays results in turfy loam, the nature of the soil governing its quality. It should neither be very sandy on the one hand, nor a stiff clay on the other. It is good when a few Buttercups and plenty of Clover grow in the pasture. Half of this or a little more, the remaining portion consisting of equal parts of leaf mould, manure so far decayed and dried that it can be rubbed through a wire sieve ½-inch mesh, and wood ashes or crushed charcoal, with a dash of sand is a suitable mixture for Fuchsias, Pelargoniums and softwooded plants generally. Spring, when fresh growth is commencing, is a good time for potting. Decayed leaves and silt from a wet ditch are not suitable for your purpose. Leaf soil is made from leaves that decay by exposure in the open air. Those you mention are too dry. Good leaf mould can be scraped from the surface of the ground in plantations and from hedge bottoms, not from wet ditches. Cauliflowers and Cabbage plants raised now in good soil and a sheltered position would, if well grown, be ready for cutting in

August. If you sow in the frame the sash must be drawn off except in very cold and inclement weather; if kept close the plants will be weak and tender. Sow thinly. If the plants are an inch asunder when they appear they will be quite close enough, and if much closer thin them promptly, dusting the others with soot occasionally if slugs attack them.

Camellia Waratah (*W. H.*).—As may be seen by the notification under "Names of Plants," we only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Nine hundred and ninety-nine out of every thousand Camellias grown in gardens are varieties of the nature indicated, and if we were to undertake to name them we should be inundated with blooms, and besides, many alleged varieties are known under different names, and some of the flowers too closely resemble each other to be named with accuracy, or without actual comparison with others in a large collection. As one of the two blooms you send is so distinct, and as the owner of the plant is under the impression it is the only one in this country because his father imported it forty years ago, we have no hesitation in making an exception in this case, and give the name of the variety in order to show that it has been grown in England more than forty years, and is still grown, though plants are perhaps not so numerous as formerly. The rich red Waratah, with its broad guard petals and cushioned centre, is also known as Anemoniflora. It is a variety of C. japonica. There are several forms with Anemone or Hollyhock shaped flowers of different colours, but the red one is the original, hence is known as the Old Waratah. We have known this variety for more than fifty years, and find it in a nurseryman's catalogue seventy years old. We have a flower before us exactly like yours, but from a plant now flowering in a garden in the midland counties, and we know of others. The striped variety is probably caryophyllioides.

Annuals for Cutting (*G. T. A.*).—The following are suitable for the purpose—some for bouquets and small vases, others for larger receptacles:—Asperula azurea setosa, blue, 1 foot; Calliopsis in variety, yellow and brown, 2 feet; Candytufts, white, carmine, and purple, 1 foot; Catchfly (Lobel's), pink, 1 foot; Centaurea Cyanus (Cornflowers), blue, also in lighter colours, 1½ foot; Centranthus macrosiphon, red, 1 foot; Chrysanthemums, carinatum and coronarium varieties, yellow, white, and crimson, 1½ foot; Collinsias, blue and white, 1 foot; Collomia coccinea, red, 1 foot; dwarf Convolvuluses, blue and various colours, 1 foot; Erysimums, orange and yellow, 1½ foot; Eschscholtzias, orange and yellow, 1 foot; Godetias, crimson, rose, and white, 1½ foot; Gypsophilas, white and pink, producing graceful sprays, 2 feet; Kaulfussia amelloides, blue, 1 foot; Love-lies-Bleeding, drooping crimson tails, 2 feet; Lupinus nanus, blue and white, 1 foot, taller varieties in different colours, 2 feet; Larkspurs, 1½ to 3 feet; Malope grandiflora, crimson, 3 feet; Mignonette, familiar to all; Nigellas (Love-in-a-Mist), white and lilac, 1½ foot; Prince's Feather, crimson plumes, 3 feet; Senecios, crimson and purple, 1 foot; Sweet Scabious, biennials, though flowering freely as annuals, various, 1½ foot; Sweet Sultan, yellow, white, and lilac, 1½ foot; Sweet Alyssum, 1 foot; Sweet Peas, various, 4-5 feet; Venus' Looking-glass, blue, ½ foot; Miniature Sunflower, yellow, 4 feet. Cut flowers of those are suitable for room adornment, and some of them, Mignonette and dwarf Convolvuluses for instance, will be found to grow and flower in water in light rooms for a considerable time. Several half-hardy annuals afford beautiful flowers for cutting, including Stocks, Asters, Zinnias, Salpiglossis, Phlox Drummondi, and Helichrysums.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*J. U.*).—Large, Althorp Crasanne; long stalk, Old Crasanne; medium, Ne Plus Meuris; small, March Bergamot.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*Old Reader*).—The tree of which you send sprays is not the Lucombe Oak, but the true old Evergreen Oak (Quercus Ilex), of which there are many seminal forms. The Lucombe Oak is the result of a cross between the Turkey and the Evergreen Oak, hence is commonly known as the Evergreen Turkey Oak: botanically, Quercus Lucombeana. The Fern appears to be Gymnogramma tartarea. (*L. A. W.*).—1, Celsia Arcturus; 2, Anthericum variegatum; 3, Begonia manicata; 4, Begonia Schmidti. (*F. H.*).—1, Adiantum assimile; 2, Adiantum cuneatum; 3, Davallia canariensis; 4, Selaginella cæsia; 5, S. Martensi; 6, Lycaste aromatica.

COVENT GARDEN MARKET.—March 7th.

Business steady with prices unaltered.

FRUIT.

	s.	d.		s.	d.
Apples, ½ sieve	2	6	to	4	6
Nova Scotia and Canada barrel	10	0		18	0
Cobs, 100 lbs.	45	0		0	0
Grapes, per lb.	3	6		5	0
Lemons, case	10	0		15	0
Oranges, per 100	2	0	to	5	0
Pears, dozen	3	0		6	0
Pine Apples, English, per lb.	0	0		0	0
St. Michael Pines, each	3	0		5	0
Strawberries, per oz.	2	0		0	0

VEGETABLES.

	s.	d.		s.	d.
Artichokes, dozen	1	0	to	2	0
Asparagus, bundle	0	8		0	0
Beans, Kidney, per lb.	1	0		0	0
Beet, Red, dozen	1	0		2	0
Broccoli, bundle	0	0		0	0
Brussels Sprouts, ½ sieve	3	6		4	0
Cabbage, dozen	1	6		0	0
Capsicums, per 100	1	6		2	0
Carrots, bunch	0	4		0	0
Cauliflowers, dozen	3	0		4	0
Celery, bundle	1	6		2	0
Coleworts, doz. bunches	2	0		4	0
Cucumbers, each	0	6		0	9
Endive, dozen	1	0		2	0
Herbs, bunch	0	2		0	0
Leeks, bunch	0	3		0	4
Lettuce, dozen	0	9	to	1	3
Mushrooms, punnet	0	6		1	0
Mustard and Cress, punt.	0	2		0	0
Onions, bunch	0	3		0	0
Parsley, dozen bunches	2	0		3	0
Parsnips, dozen	1	0		0	0
Potatoes, per cwt.	4	0		5	0
,, Kidney, per cwt.	4	0		0	0
Rhubarb, bundle	0	2		0	0
Salsafy, bundle	1	0		1	6
Scorzoners, bundle	1	6		0	0
Seakale, basket	1	3		1	9
Shallots, per lb.	0	3		0	0
Spinach, bushel	1	6		2	0
Tomatoes, per lb.	0	6		1	0
Turnips, bunch	0	4		0	0

PLANTS IN POTS.

	s.	d.		s.	d.
Aralia Sieboldi, dozen	6	0	to	12	0
Arbor vitæ (golden) dozen	6	0		9	0
,, (common), dozen	0	0		0	0
Azalea, dozen	24	0		42	0
Cineraria, dozen	8	0		12	0
Cyclamen, dozen	12	0		24	0
Dielytra, per dozen	12	0		18	0
Deutzia, per dozen	6	0		9	0
Dracæna terminalis, doz.	30	0		60	0
,, viridis, dozen	12	0		24	0
Epiphyllum, dozen	10	0		18	0
Erica, various, dozen	9	0		18	0
Euonymus, in var., dozen	6	0		18	0
Evergreens, in var., dozen	6	0		24	0
Ferns, in variety, dozen	4	0		18	0
Ficus elastica, each	1	6		7	0
Foliage Plants, var., each	2	0		10	0
Fuchsia, dozen	0	0	to	0	0
Genista, per dozen	6	0		12	0
Hyacinths, dozen	5	0		10	0
Hydrangea, dozen	0	0		0	0
Lilies Valley, dozen	18	0		24	0
Lilium lancifolium, doz.	0	0		0	0
Marguerite Daisy, dozen	9	0		12	0
Myrtles, dozen	6	0		12	0
Narciss, per dozen	8	0		10	0
Palms, in var., each	2	6		21	0
Pelargoniums, dozen	0	0		0	0
,, scarlet, doz.	6	0		9	0
Poinsettia, dozen	0	0		0	0
Solanum, dozen	9	0		12	0
Spirea japonica, doz.	12	0		15	0
Tulips, dozen pots	6	0		9	0

CUT FLOWERS.

	s.	d.		s.	d.
Abutilons, 12 bunches	3	0	to	6	0
Anemone (Fulgens), 12 bunches	5	0		8	0
Anemones (French), 12 bunches	3	0		4	0
Arum Lilies, 12 blooms	4	0		6	0
Azalea, 12 sprays	0	6		1	0
Bouvardias, bunch	0	6		1	0
Camellias, 12 blooms	1	0		4	0
Carnations, 12 blooms	1	0		3	0
Chrysanthemums, 12 bchs.	0	0		0	0
,, 12 blooms	0	0		0	0
Cyclamen, 12 blooms	0	6		1	0
Daffodils, Double, 12 bchs	5	0		10	0
,, Single, 12 bchs	6	0		12	0
Daisies, 12 bunches	2	0		4	0
Epiphyllum, 12 blooms	0	4		0	5
Eucharis, dozen	4	0		6	0
Gardenias, 12 blooms	9	0		18	0
Hyacinths, Roman, 12 sprays	0	6		1	0
,, French, 12 bunches	0	9		2	0
Lapageria, coloured, 12 blooms	1	0		1	6
Lilium longiflorum, 12 blooms	6	0		9	0
Margnerites, 12 bunches	2	0		6	0
Lilies, White, 12 bunches	0	0	to	0	0
,, Orange, 12 bunches	0	0		0	0
Lily of the Valley, 12 sprays	0	6		1	0
Mignonette, 12 bunches	3	0		6	0
Narciss, white (French) 12 bunches	2	0		4	0
Narciss, various, 12 bchs	1	6		3	0
Pelargoniums, 12 trusses	1	0		1	6
,, scarlet, 12 trusses	0	6		0	9
Primroses, 12 bunches	1	0		3	0
Primula (single), bunch	0	4		0	6
,, (double), bunch	0	9		1	6
Roses, Red, 12 blooms	4	0		8	0
,, (indoor), dozen	3	0		4	0
,, Tea, dozen	1	6		4	0
red, dozen (French)	1	6		3	0
,, yellow	4	0		9	0
Snowdrops, 12 bunches	1	0		2	0
Spiræa, bunch	0	6		1	0
Stephanotis, 12 sprays	0	0		0	0
Tropæolum, 12 bunches	2	0		3	0
Tuberoses, 12 blooms	2	0		3	0
Tulips, dozen blooms	0	6		1	0
Violets, 12 bunches	1	0		1	6
,, (French), bunch	1	6		2	0
,, (Parme), bunch	3	6		4	6
White Lilac, per bunch	5	0		6	0



LENT CORN.

The month of March will be a busy one this year owing to the fact that after a winter of singular mildness, frost, snow, and bitter north-east winds have prevailed during the greater part of February, so that work on the land has been at a standstill, and all we could do was to make due preparation for sowing the spring corn when the change to milder weather does come. With such an exceptionally mild open winter we did think even the laggards would have had all the land ploughed quite a month ago, but to our surprise we saw some ploughs going upon a Barley stubble only a few days ago, and they were ploughing in 2 or 3 inches of snow. No practice could possibly be worse than this, for we know that to plough in snow is to cause the land to continue wet so long as to retard work upon it subsequently. We must own, however, if it is foul land intended for a fallow it would not matter so much, yet still the ploughing ought to have been done before. The only late ploughing for Lent corn that is justifiable is the ploughing for

Barley or Oats after the sheep folds on Swedes or White Turnips. We shall do so on a light land field where we can follow the folds closely and sow as we plough, so that not a day will be lost.

Oats have become so cheap that our area of land under spring Oats will be less than it has ever been before, for while we can purchase sound wholesome imported Oats at the rate of 154 lbs. for 7s. 6d. it certainly will not answer to have much land under this crop. But we do not intend to lay down a rule in Oat growing; rather would we say wherever it is done let it be done so well that the average yield of grain is fully 80 bushels an acre. We know full well that to attain this average the practice must be good, and not one point of cultural importance must be lacking. We know that the Oat crop of many farmers falls much below this average, yet if they only would apply manure to the land for Oats just as they do for Wheat or roots they would be well repaid for the outlay. Many years ago we saw in the same field Oats 6 inches high and 6 feet high, the latter growing upon the site of a manure heap, the former at the other end of the field upon a hard headland quite innocent of manure, and we have never forgotten the lesson. Now, we do not say that a 6-foot crop of Oats is to be the common mean, but we have proved that a crop with straw from 4 to 5 feet high, crowned with heavy panicles of clustering grain, affords a yield of grain up to our average and a heavy bulk of straw of much value when chaffed for feeding horses, cattle, and sheep; pigs, too, will consume a lot of straw both of Oats and Barley if it is given to them in small quantities daily. No doubt under certain conditions it may answer to cultivate Oats both for home consumption and for sale, but then both the sort and sample must be of the best. Take for example a sample of pure home-grown White Canadian Oats, which we had recently on offer from one of our farms; this met a ready sale at 20s. per quarter, and a crop of 10 quarters an acre would not be unprofitable even at such a price.

Barley has, under the depression, so far proved fairly profitable, but even this one bright streak in the dark horizon of our troubles is likely to be obscured by low-priced foreign importations, which malsters are turning to such profitable account that Barley merchants declare the trade is ruined. Farmers who have been so imprudent as to hold over their Barley till now find they must incur a heavy loss if they sell, and such prices as 36s. or 40s. per quarter, as were made easily by full bright samples in autumn, are now not to be had. While making mention of this fact, it will never answer to suffer it to act as a hindrance to our plans for this season; rather should it prove an incentive to greater exertion in doing all we can to insure a full crop of "Ripe and golden Barley." We intend sowing several hundreds of acres, all which will have a dressing of pure home-mixed chemical manures where sheep-folding has not been thoroughly done, for we know that we cannot have a full crop out of soil that is not well stored with fertility. We also know that while taking care to make such provision of plant food it must be done in the most economical manner. Both in ordinary practice and under careful experiments it has been proved repeatedly that heavy dressings of farmyard manure, however carefully applied to the soil, are not equal to chemical manures in promoting the development of a full crop of grain; the comparative cost is also much in favour of the pure chemicals, and yet there are men even now ready to declare that muck is the sheet-anchor of farmers. "Why," said a shrewd man of business to us recently, "for a man to declare he is losing some hundreds of pounds yearly in cattle breeding, simply that he may manufacture a certain quantity of muck for his land, is just equivalent to proclaiming himself a fool." Certainly such a man has no right to grumble about hard times, for is not he the very embodiment of obstinacy? and to go on telling him he might do better, is very much like that casting of pearls before swine against which we have a scriptural injunction.

WORK ON THE HOME FARM.

A commodious snug fold, well fed ewes, and careful attention have enabled the lambs to pass through the recent spell of cold weather with impunity; with very few exceptions they are strong and healthy, and the elder ones have already been docked and otherwise properly treated. We prefer having this done at the age of a month, for if left much later there appears to be a proportionate increase of suffering. At from three weeks to a month from the birth lambs begin eating, and we at once give them what bran they can consume, and when the weather becomes mild again the ewes will be taken to fold upon Swedes, while the lambs will be let run forward upon White Turnips for the sake of the green tops which they consume greedily, as well as much of the root. The proper use of Turnips for ewes and lambs is a very simple matter. We let the ewes have none before lambing, but plenty afterwards, with a fair allowance of corn and chaff; we thus avoid all risk of loss by abortion, or rather, we may add, of the serious loss both of ewes and lambs which so frequently happens by carelessness or ignorance about a diet of Turnips. Often during the severe weather which was so general during the greater part of the month of February did we pass flocks folded out upon Swedes, with but scanty shelter around the lambing fold, and with the lambs standing about shivering under the scathing influence of a cold nor'-easter. Weakly lambs must suffer and often die from such exposure, and dear-bought experience leads to the conclusion that there must be losses among the ewes too. We have lost three ewes, but neither ease was caused by mismanagement. Last year we had a serious loss of some twenty ewes in one flock simply because Turnips were used contrary to our express orders, and we had to part with the shepherd, who was a respectable, sober, steady man, but whose overweening conceit led to the disobedience and its consequences. Upon an off-hand farm the flock has very snug quarters in a commodious old barn, opening on one hand into pasture, and on the other into a high-walled yard with a large shed. When this farm came upon our hands the barn was almost bare of thatch, and altogether sadly out of repair; the money spent in its restoration to a sound building was certainly a sound investment, the barn being filled with corn in autumn, then cleared for the lambing, and subsequently it is used for early-shorn fat hoggets. We know a gentleman who has thus turned all the old barns upon his estate to account for sheltering ewe flocks during lambing, but then he has laid most of his land down to permanent pasture, and has no other use for his barns.

FARM LITERATURE.—Messrs. James Carter & Co., 237, High Holborn, send us a copy of their Essay upon Permanent Pastures, which is now embodied in a more comprehensive shilling brochure entitled "Carter's Practical Farmer." The work consists of ninety large pages, and contains a mass of information on various subjects in which many of our readers are interested, and is worthy of perusal. The illustrated Farm Seed Catalogue of Messrs. Sutton & Sons, Reading, is an useful rather than ornamental production, and includes a concise review of the agricultural position. Messrs. Little & Ballantyne also send a good catalogue of farm seeds.

OUR LETTER BOX.

Sowing Oats and Grass Seed (W.).—Drill 3 bushels per acre of Black Tartarian Oats as soon as the land is dry enough, and follow with the seeds for permanent pasture, the Grass seed to be well mixed and sown first, following at once with the Clovers, and then harrowing sufficiently to well cover the seed. Have birds kept off till growth is visible, or there will be a heavy per-centage of loss of the small seed. Here is a suitable mixture for your chalky soil:—Perennial Rye Grass, 10 lbs.; Cocksfoot, 7 lbs.; Crested Dog's-tail, 5 lbs.; Meadow Fescue 2 lbs.; Cat's-tail, 3 lbs.; Hard Fescue, 4 lbs.; Sheep's Fescue, 4 lbs. Golden Oat Grass, 1 lb.; Yarrow, 2 lbs.; Perennial Red Clover, 1 lb. Alsike Clover, 1 lb.; White Dutch Clover, 1 lb.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE. 1888. Feb. & March.	9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of soil at 1 foot.	IN THE DAY. Shade Temperature. Max.	IN THE DAY. Shade Temperature. Min.	IN THE DAY. Radiation Temperature. In sun.	IN THE DAY. Radiation Temperature. On grass	Rain
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 26	30.110	30.3	29.1	N.E.	35.0	36.3	24.3	73.4	20.2	0.010
Monday..... 27	30.190	32.9	32.1	N.E.	34.9	35.3	30.6	46.6	27.6	—
Tuesday 28	30.400	31.9	31.4	N.E.	34.6	34.6	29.8	49.7	24.1	—
Wednesday.. 29	30.378	30.3	27.9	N.E.	34.3	34.8	28.8	55.4	27.4	0.015
Thursday.... 1	30.323	28.1	25.9	N.	34.4	35.1	26.2	68.4	22.4	—
Friday 2	30.193	32.0	31.1	N.	34.3	41.4	24.7	72.1	17.7	—
Saturday 3	29.979	35.3	32.4	N.	34.2	39.6	31.7	75.3	28.6	—
	30.225	31.5	30.0		34.5	36.9	28.0	63.0	24.6	0.025

REMARKS.

26th.—Fine bright morning, cloudy afternoon.
27th.—Dull all day.
28th.—Overcast all day except for five minutes at 1 P.M.
29th.—Dull, with occasional flakes of snow in the morning; frequently bright in afternoon, but with one or two slight snow showers.
1st.—A little snow early and till 9.30 A.M., then bright and fine throughout.
2nd.—A lovely day, though cold.
3rd.—Fine, and generally bright.
Not quite so cold as the previous week, but much colder than usual, even in January. Frost every night, no rain, and very little snow.—G. J. SYMONS.

FAREWELL TO SOUTH KENSINGTON.

AT last after a chequered career, in which fitful periods of sunshine have alternated with longer terms of shadow, occasionally deepening to gloom, the end of an epoch has come, and the last meetings of the Fruit, Floral, and Scientific Committees of the Royal Horticultural Society have been held at South Kensington. The Gardens were opened with an imposing ceremonial on June 5th, 1861. The members of the Fruit and Floral Committees, Her Majesty's Commissioners of 1851, the Council of the Society, and other officials to the number of about 150, with the President, the late Prince Consort, and a dozen other members of the Royal Family assembled in the Council Room and from thence marched in procession through the Gardens to the entrance to the Conservatory, where the proceedings were conducted.

Dr. Lindley, the Secretary of the Society, read an address to the President, recounting the past history of the Society and its re-establishment under such brilliant auspices. A paragraph in that address is worthy of reproduction. "Horticulture is the parent of agriculture. It determines on a small scale the value of the principles on which an extended cultivation of the soil depends. It is associated with our food, our wealth, and many of our social enjoyments. Your Council believe that this Society has already contributed largely to the establishment of the sound principles on which cultivation is founded. In the course of the last half-century the Society has unremittingly used its influence and its means to enlarge the skill of the gardener and the taste of the community. It has had the good fortune to see during that long period many ornamental plants and every race of fruits and esculents undergo great improvement ; and it is not too much to assert that its labours have raised English gardeners to the highest rank." There is the true horticultural ring in those words, and for a time the affairs of the Society were conducted largely in their spirit, but not for long. Expenditure was indulged in a manner that seems extraordinary, and liabilities incurred that could not be met, until the real objects of the Society were crushed by the iron hoof of financial difficulties, which have not to this day been surmounted.

Attempts have been made time after time to strengthen the Society, but almost invariably on the wrong lines. Shows have been tried and failed, and tried again with the same results. Shows large and shows small, shows at home in London and abroad in the provinces have been provided, and though good in themselves have drained the Society almost of its life. Now and then one of them has been a success financially, but the whole system has been a lottery in which the blanks, as is usual in such cases, have far exceeded the prizes. Exhibitors have no doubt benefited, or some of them, but the Society as a corporate body has undoubtedly been weakened ; and unless the elements of strength are provided it cannot perform the functions for which it was established.

It has been said that some of the shows have been successful. Without going further back, one of the most important opened on July 21st, 1875. It was an expression of horticultural rejoicing on the overthrow of what may be termed the skating rink dynasty, for it was actually proposed to form a rink in the gardens, and preparations were made to that end. But horticulturists rose in rebellion, and Lord Bury's Council was overturned ; Lord Aberdare, and an excellent chief he proved, being elected President of the Society. The show in question was, so to say, a spontaneous act of the chief nurserymen and others, and was wholly of a complimentary character, no schedule being provided nor prizes offered. It was a splendid triumph, and though not the originator of the "arrangement for effect" groups of plants for which prizes are now systematically offered, it gave an enormous impetus to that method of exhibiting, for the show itself was an aggregation of grand miscellaneous arrangements of plants displayed with consummate taste. This was followed by a great competitive exhibition in June, 1876, and this in turn by perhaps the most unique show of flowers that has ever been arranged—the show of Covent Garden produce on May 2nd, 1877, which was attended by Her Majesty and a great throng of visitors. On May 28th of the following year the Prince and Princess of Wales attended the chief exhibition, which was, as might be expected, a brilliant gathering ; but even this sunshiny era in the Society's career did not prove of lasting benefit, and the resources of the Society were exhausted by the Preston fiasco, and again at Liverpool ; so that it may be said that shows on the whole, however extensive and meritorious, and notwithstanding an occasional financial success, have been exhausters of the Society's resources, leaving it weaker after the efforts that had been designed for its support.

During the period indicated the fortnightly and monthly Committee meetings were held in the Council room, which was quite large enough for the products—new, rare, or specially meritorious—that were brought for examination. This plan continued till the series of great general Exhibitions—the Fisheries, Health, and Colonial—that appropriated nearly the whole of the gardens, in fact they were demolished, except the upper portion, including the terraces and conservatory, in which fine structure the meetings and periodical shows have been since held. For such exhibitions as have been from time to time arranged in it the building was admirably adapted, but for the ordinary fortnightly meetings it was much too large ; however, it was agreeable by the surrounding Palms and plants, comfortable in being suitably heated, and there are few members of the Committees and others who do not leave the scene of their labours and deliberations with some regret. There was no alternative but to sever the connection that has so long existed, the terms imposed by Her Majesty's Commissioners as the landlords of the property for the retention of the site being quite untenable, not to say exacting, considering the vast sums that have been expended on the property by the Society. Reflections on the action of the Commissioners can, however, do no good, and the past must be left to "Time's effacing fingers," and attention concentrated on the future with the object of rendering it, as far as is possible under the circumstances, prosperous for a Society that ought to be made to flourish in this wealth-possessing and garden-loving land.

Though we have stated our preferences, and the reasons for them, for relinquishing for a time a policy savouring of speculation, and adopting instead the principle of husbanding resources, and at the same time gathering strength from and to Chiswick, a different course has been determined. This, and the reasons for it, are clearly and consisely stated in the following letter from a true horticulturist, Mr. A. H. Smee.

"If the Royal Horticultural Society is to continue to exist it is in my opinion absolutely necessary that it should have a London office easy of access in some central position.

"It is also necessary that the Society should endeavour to induce horticulturists to join, in order that funds may be procured for the maintenance of the Chiswick Garden.

"I believe it will be advisable to have a few meetings in the summer in these Gardens, in order to give persons who reside near Chiswick some inducement to join the Society.

"I think it will prove good policy to have some place nearer the City than either South Kensington or Chiswick to hold fortnightly shows. Although the Drill Hall near Victoria Street may not be everything that could be wished, nevertheless it is close to the Army and Navy Stores, which large numbers of people frequent.

"I shall be much disappointed if sufficient gate money is not taken to at least pay the rent of the Hall, provided the trade support the Society by exhibiting the plants of their establishments.

"I expect to be told that gate money at South Kensington was a failure, but it must be remembered that during the Colonial and other Exhibitions the Society did not charge for entrance.

"If, as I have known, £50 be taken as gate money in Finsbury Circus for the exhibition of a few sickly plants grown in the City, surely the Council may reasonably expect to take at least £200 during the whole year at shows at Westminster."

No one can doubt that Mr. Smee and his coadjutors have been animated with an earnest desire to place the Society on a firmer basis; and anything that we can do we shall do most willingly towards "gaining funds for the maintenance of Chiswick." Though showing in the past has, with rare exceptions, been the exact reverse of remunerative, it does not follow that the new departure in taking flowers and fruits to the multitude may not have better results. The plan has to be tried, and it shall, so far as we are concerned, have a fair trial in the earnest hope that it will fulfil the expectations of its projectors. It cannot be forgotten, however, that the most profitable Exhibition the Society has had of late years was at Chiswick, where "people will not go," but *did* go to see the Apples and left a good profit behind them. Moreover, the local shows held yearly in the gardens have been much better attended than the ordinary "meeting-shows" have at South Kensington. Westminster, however, is fresh ground, and may prove fertile, though many well-wishers of the Society who favour a forward policy are of opinion a bolder move to the business heart of the City of London would have brought more support. Be that as it may, the plan to pursue is for all well-wishers of the Society to act cordially in supporting it on the lines laid down for its future working with the object of achieving a distinct success.

VEGETABLES FOR EXHIBITION.

POTATOES AND PEAS.

As an old showman in several counties, and not entirely unsuccessful, I have been asked to give selections of varieties and methods of growing them for the purpose in question. Even cultivators who never exhibit their produce should all the same endeavour to grow it in the best possible manner, and as if the different kinds had to be staged in competition at the leading shows.

No collection of vegetables, however limited in number, may be said to be complete without a dish of Potatoes. Judges always expect to find them, and are apt to form an unfavourable opinion of any collection from which they are absent. I have also observed that rounds used to be preferred to kidneys, but of late years this has been less perceptible, many of the so-called kidneys more nearly approaching the rounds both as regards the roughness of the skins and shape. Prizes nowadays are rarely offered for large collections of Potatoes, and I am glad that such is the case, as these only tend to encourage the cultivation of too many varieties. Supposing twelve varieties can be grown, I would recommend of kidneys, Snowdrop, Sutton's Seedling, Cosmopolitan, Carter's Surprise, Cole's Favourite, and Welford Park; and rounds, Reading Russet or the improved form Carter's King of the Russets, Schoolmaster, Sutton's Satisfaction, Prime Minister, Vicar of Laleham, and Village Blacksmith. If room can be spared try also some of the many novelties now being distributed. Among these may perhaps be found some superior to any named in my selection.

Potatoes generally delight in deeply worked fresh soil, any that is "manure sick" being altogether unsuited to them. The latter may be improved by bastard trenching, and sometimes a dressing of quicklime will work wonders. The ground being in a sweet condition a fairly liberal dressing of farmyard manure may safely be given, the tubers, however, not coming in contact with it. When I have to deal with stiff clayey soil such as abounds in some parts of Kent and Sussex, as well as largely in Essex, Middlesex, and Somerset, I found it almost impossible to grow handsome tubers without special pains being taken with the soil. During the winter a large quantity of old sifted potting soil, as much leaf soil as could be spared, and plenty of ashes from the heap of burnt garden refuse were all thrown together and well mixed ready for planting time. As early in April as the ground could be ventured on without causing it to bind badly it was deeply stirred and all lumps broken, this being either done with the fork or the two-tined Canterbury hoe. The rows being next lined out a good layer of the prepared fine soil was forked in where these would run, and the drill being opened with either a half-mattock or Canterbury hoe; this is still further mixed with the soil. Contrast this with the usual surface scratchings with lumpy soil underneath, and it will soon be seen where the advantage rests. Drills 6 inches deep are suitable, and the heavier the land the greater the need to plant on or near the surface.

Pains should also be taken with the preparation of the sets as well as the soil for their reception. In the case of some kidneys, notably those of the Ashleaf and Lapstone types, the loss of the primary central sprouts simply spoils the set, and it is very unwise to allow any of the other rounds and kidneys to sprout prematurely, this greatly weakening them. What is wanted in all cases is one strong sprout, and this, if duly preserved, no other side shoots being allowed to grow, will eventually yield better crops and larger tubers than those sets that are allowed to develope a quantity of weakly and but little branching haulm. With the exception of the two types named it is not imperative to plant whole sets, but as a rule I prefer medium sized whole tubers, removing all but one strong sprout from them prior to planting. Cut sets to be similarly treated and also dipped in slaked lime, as this checks bleeding and keeps slugs away. Crowding either the rows or sets being unprofitable, the former ought to be not less than 3 feet apart and the sets from 10 inches to 12 inches asunder in the rows. I prefer to plant sets already sprouted to a length of 2 inches, these being first moulded over with the hand prior to levelling the whole of the soil about them. Thus treated an even row is secured, and when one strong sprout has taken the lead side shoots make no headway. Now, a few words as to artificial manures. I have tried many, and on the whole give the preference to superphosphate of lime. A hundredweight of this, which costs about 7s. 6d., will go a long way. It is best applied in the open drills prior to planting, and I cannot better state the precise quantity to be used other than by advising it to be sprinkled over the soil much as salt or pepper is used over cooked meat or vegetables, only enough to season it being given. Any other strong artificial or specially prepared manures must also be used in moderation, and failing any of these soot may be freely dusted along the drills.

Directly any of the shoots show through the soil protect them in some way, as if thus early frosted they seldom properly recover. Soil drawn up to and over them is the simplest way of protecting the tender haulm, but an enthusiast will not hesitate to use inverted flower pots with the holes covered, branches of evergreens, or straw litter, if a frost is anticipated after the haulm has grown considerably. When the haulm is about 6 inches high the ground on each side of the rows should be well loosened with the hoe and the final moulding-up given. I ought perhaps to add that it is advisable to thin out the haulm where unfortunately several growths have developed, this being done prior to moulding-up. Watering between the rows has been tried during a hot and dry summer, but I failed to detect any benefit derived therefrom. According to my experience, if the ground is well manured and carefully prepared, it must be a very dry season indeed that will spoil the growth of the Potatoes. What few rows of exhibition varieties we grew last season succeeded admirably in spite of the drought.

A good dish of Peas always counts well in a collection of vegetables, and at many shows there are also prizes offered for one or more dishes. With several kinds of vegetables it is possible to obtain good dishes for exhibition from the ordinary crops, but this rarely happens in the case of Peas. They must have extra pains taken with them, and they pay for the trouble. As most gardens differ materially in the character of the soil, it follows that its preparation ought also to be varied. Should it be naturally deep and well drained, double digging may safely be resorted to, plenty of solid manure being mixed with each spit. If the soil is cold and heavy, resting on a clayey subsoil, it is unwise to encourage a deep root run. A favourite plan with many Pea growers is to form Celery-like trenches for their rows, this concentrating the manure, and also admitting of water being more easily applied. I do not believe in the practice; in fact, am not sure it is wise even in the case of Celery. When the roots are confined to a narrow trench they are almost as much dependent on the watering pot as are plants in pots. If it is either impossible or unwise to trench or double dig the whole of the quarter, either double dig a space at least 3 feet wide for each row, or else be content with well manuring and deeply digging the whole of the ground, this encouraging the roots to spread right and left—an obvious gain. It is also of importance that the heavy ground be prepared early in order that the surface may become well pulverised, the seed germinating and the young plants growing away more freely under such conditions.

It is of importance that the Peas be at their best just when most wanted, the earliest pods usually being the best. No exact dates for sowing can be given, so much depending upon the weather experienced and the variety sown. As a rule they may be gathered in about fourteen weeks from the time of sowing, an extra week at least being allowed for known late varieties. They must also, whether tall growing or of comparatively dwarf habit, have plenty

of room. The rows ought to be as far apart as the Peas grow in height. For instance, a distance of 6 feet apart is not too much for either Telephone or Duke of Albany. Isolated rows, or those disposed 10 feet or more apart, the intervening spaces being planted with Cauliflowers, Broccoli, or somewhat similar crops, give the best returns, and this is a good method of arranging the ordinary rows of Peas. We always open the drills 6 inches wide, and in dry warm weather 3 inches deep is not too much. The seed is sown thinly and covered with good fine soil, this being brought from the frame ground if need be, rather than place hard lumpy soil on the seed. Instead of moulding up the rows when about 4 inches high, support them with spray, and finally stake before they are far advanced, taking care not to bring the points of the stakes too closely together, or a second lot of stakes will be needed to support the haulm. Prior to staking, however, thin out the plants where crowded, leaving them not less than 6 inches apart. When given good room, nearly all the exhibition varieties are encouraged to branch strongly, and as a consequence produce a long succession of fine pods. After the staking is completed raise a small ridge on each side, so as to form a basin 12 inches wide, this greatly facilitating the work of thoroughly watering the rows whenever necessary. Dryness at the roots ought always to be anticipated, as it is almost impossible to moisten the ground when once allowed to become dry. Driblets are simply thrown away, nor are ordinary rains of much benefit to the established rows of Peas. They also require frequent supplies of liquid manure, that obtained from a farmyard or by soaking good manure in a tub of water being excellent for the purpose, being diluted with water, in each case, according to its strength. When Messrs. Carter's famous Peas, Telegraph, Telephone, Stratagem, and Pride of the Market were first introduced, valuable prizes were repeatedly offered for dishes of them to be shown at South Kensington and elsewhere. The most successful exhibitor, if I mistake not, was Mr. H. Marriott, Boston, Lincolnshire, and he attributes much of his success to a free use of blood fresh from a slaughter house. This was poured along the rows, and either washed in by the rains, or watered in in dry weather, and better Peas I have not seen, and very few to equal them. In addition to this liberal treatment, it is also advisable to pinch out the points of the haulm when the first pods are set, the pods also being thinned after it is seen which are most perfectly formed. Stopping the haulm also hastens the development of the pods. Retarding is not a very easy matter, but when it is seen the first-formed pods are too early, cut them off, and trust to the later ones. They will fill properly in from fourteen to twenty-one days, according to the time of year.

For exhibition late in May or early in June there is none to surpass William I., and a well grown dish of it is very telling in November, the seed in this instance being sown as soon as ripe in the summer. Telephone and Telegraph, the latter being the greener of the two, follow closely on William I. Stratagem and Pride of the Market, as far as the size and appearance of the pods are concerned, respectively resemble Telephone and Telegraph, but as they rarely exceed a height of 3 feet they are the best for small gardens. All may be materially forwarded by being sown in small pots, turves, or boxes under glass, and duly planted out before they are much drawn. Duke of Albany may be described as a late form of Telegraph, and is a fine handsome Pea for the July and early August shows. Prodigy (J. Veitch & Sons) is another handsome main crop variety ; and Autocrat another of Veitch's novelties, promises to be grand for the August shows. Laxton's Walton Hero, a fine late variety, and Charmer, by the same raiser, though not large podded, is yet of good taking appearance and does well in a dry season. Ne Plus Ultra, when well grown, is yet hard to surpass, many judges having a "weakness" for this well tried main crop and late Pea.—EXHIBITOR.

(To be continued.)

THE CULTURE OF FREESIAS.

I VERY gladly give my experience in the successful culture of Freesias for the benefit of those readers who may not be acquainted with their requirements. I have reason to believe their cultivation is not yet understood by a large number of gardeners and others who would find these flowers most useful during the winter months ; the number of failures and the inquiries respecting their culture confirm this belief. It would not perhaps be out of place to say that owing to our success, and the bulbs having increased so fast, we have been able to supply friends with bulbs which would have amounted to more than our present stock, and all these have been produced from six single bulbs purchased the first year they were sent out. Where failure occurs it plainly shows the plants are either neglected at some period, or their management is not understood. We have about 150 plants which have flowered, and these will make three times that number for next year, besides a quantity of smaller bulbs, which would flower the following year if potted and grown precisely the same as those expected to flower. Our first plants were in bloom at the beginning of the year, others were brought on in succession, and there are some twenty in flower at the present time, giving us from twenty to thirty spikes of bloom each, and I think there would be no difficulty of extending their flowering period over three months if desirable.

As the plants finish flowering the dead blooms are picked off, for if the seed were allowed to remain on the plants it would considerably weaken the bulbs, and most likely failure would be the result next year. After this they are removed to our latest vinery, and watered the same as while flowering, for they are now perfecting the next season's flowering bulbs. The pots remain in this house until repotting is required, and have water supplied as they may need ; but as soon as the foliage shows signs of turning yellow they gradually receive less water until the foliage is dead, when all further watering must be discontinued. After this we place them on a shelf close to the glass, the pots being laid on their sides : they remain in this position all the summer baked in the sun till the beginning of August, by which time they are ready for repotting.

The soil is shaken from the pots, the bulbs after being sorted into different sizes to be placed together, as then the growth will come of equal strength. The soil we use is a mixture of leaf mould, yellow loam, and silver sand. The pots are three parts filled with this soil, and then eight bulbs are placed in each 5-inch pot. They are stood close together in a cold frame and watered through a fine rose. After a day or two they are covered with ashes the same as our other bulbs. After three weeks or a month they must be frequently examined to see if the growth has commenced. If left so long under the ashes there is a great risk of breaking their small growths. When the growths are about 1 inch or so above the soil the ashes must be removed, and the small plants be kept partly dark for a week or so, gradually hardening them to the light, precisely the same as with other bulbs. They remain in the same frame until the nights get cold and there is danger from frosts, when they are again transferred to our late vinery and placed on a light shelf, and from there to warmer places any time when sufficiently strong from the beginning of December onwards, or let them bloom in any cool house where frost is excluded.—R.

FERTILISATION OF EARLY PEACHES.

NUMBERS of gardeners devote much time to the fertilisation of early Peaches, and various methods are practised. Some dust all the flowers with a camel-hair brush, a very tedious process, taking much time often wanted for other purposes where there is insufficient help ; others use a rabbit's tail in much the same manner ; and many now recommend slightly syringing the trees during sunshine, certainly a much quicker operation, but of its efficacy in early houses I am not quite certain. All of the above methods are dispensed with here, and the following simple plan adapted which invariably leads to good results. When the trees are in flower we make it a rule to have a little ventilation on the front of the house at night, which tends to maintain the atmosphere in a pure and buoyant state, keeping the temperature at 50° to 55° by fire heat. The ventilation is increased in the morning as the external temperature rises. Sometimes it is necessary to open the top ventilators, at the same time closing the bottom ones, for we never have both open at once, except in warm sunshine with the absence of cold wind, cold draughts being carefully guarded against. Two or three times during the day the trellis wires throughout the house are given a sharp rap with a stick, which causes the pollen to be abundantly dispersed. These are the only means used, and the good sets of fruit we obtain amply demonstrates the efficacy of the practice ; in fact I have not noticed a single flower in either of our two early houses which has proved unfertile.—S. T. C.

AUTUMN-SOWN TURNIPS.

WE have found these very useful this winter, although little larger than fowls' eggs. If they are still in the seed bed no time should be lost in lifting them, as with the return of warmer weather they will soon produce top growth, which will spoil the roots. When drawn they should be trimmed ready for the kitchen, and then buried in sand or sifted ashes behind a north wall, where they will remain fit for use for a long time.

Turnip-tops are much appreciated in most places, hence, as "greens" are very scarce this winter, extra means should be taken to secure a good supply. If those roots too small for use be planted at once, 6 inches by 4 inches apart, some on a south and others on a north border, they will be found very useful, while the seed bed will be at command for other crops.

SWEDISH TURNIP.—We are just now cutting splendid tops of these from the Mushroom house ; they are appreciated by all,

and in many instances preferred to Seakale. Owing to the drought last season many gardeners are at their wit's end to meet the demands for vegetables. I would advise such to procure some sound Swedish Turnips, and three parts bury them in light sandy soil in their Mushroom house or any warm dark place, and they will soon be rewarded with some beautiful delicate tops, which will compare very favourably with Seakale. Select roots with entire crowns, or they will throw up a quantity of small shoots instead of one large one.—J. H. W.

PROTECTING FRUIT BLOSSOM.

Some years ago when living in what might be considered a favourable climate we did not think it necessary to protect Plum, Peach, Apricot, Nectarine, Pear, and other fruit tree blossom on the walls and some standard trees. Sometimes the crops were good, but in other seasons they were not. This did not satisfy us. We required a good crop every year, and the trees, although not highly trained, were in good health. It was not disease that made the crops deficient, but after adopting a careful system of protecting the blossom we proved conclusively that non-protecting had been the sole cause of our crops not being uniformly good.

Apricots are amongst the first fruit trees to flower, then come the Peaches and Nectarines, and finally the Plums and Pears. We have had the Apricots in flower in February, and they are always in by March. The weather then is often most unfavourable, and it is not always good in April. Indeed, it is no use depending on it being good when the trees are in bloom, and protection should always be applied, let the weather be what it may. If it does good in bad weather it certainly does no harm in genial weather, and it is most important that it be applied in time. The great point is to place the protectors on before the flowers are opened, and allow them to remain on until the fruit is formed.

Old fishing nets are cheap enough, and they form excellent protectors. A double net will insure us a crop of fruit. Where wide copings top garden walls suspend them from the front of these and secure them at the bottom. If they will not reach down all the way tie pieces of string here and there to them and attach these to pegs a few feet out from the bottom of the wall. If they will reach down to the ground peg the net to the soil. They must never be allowed to flap on the trees. This will injure the blossom as much as exposure. Where the coping is short and does not admit of the net being kept away from the trees use poles to keep it off. If these are placed against the wall at intervals of 5 feet or 6 feet and kept 3 feet to 4 feet out at the bottom the net may be stretched along and tied to them in such a way as to keep quite clear of the flowers. This is our plan of protecting fruit trees, and it is effective.—A Kitchen Gardener.

SIX GOOD BEANS.

These are not all of the same class. I do not know six good Broad Beans, six good Runner Beans, nor six good dwarfs, but for all that I can recommend six good Beans, and they will consist of two Broad, two Runner, and two dwarf varieties. There are more than half a dozen varieties to be found in each of these sections in the seed lists. Indeed, collectively, I know thirty-one varieties, but they will bear weeding severely, and my present half dozen are worth inspection and trial.

Broad Bean Seville Longpod.—I name this because it is amongst the earliest of all, and it is very prolific. It is very hardy. It may be sown in the open in any of the winter months, and by sowing in February we have had it ready in May. The pods are from 9 inches to 10 inches in length; they are narrow, and well filled with delicate beans that are much valued as a first crop. For early shows this Bean is very suitable, and a dish of long tender pods is very attractive.

Broad Bean Aquadulce.—It is not generally known that this is a splendid Bean, but I have grown it for ten years, and it has always proved true and fine. It is one of the largest of the monster-podded varieties; I have gathered pods of it 16 inches in length. When going to see a friend of mine last year I took a pod this length to show him. He asserted I was "trying it on" with an artificial construction, but when he opened it and eleven fine beans rolled out, he understood it better. It is curious that this fine variety is no one's "specialty," and yet it is undoubtedly the finest of all Broad Beans.

Runner Bean Laxton's White Czar.—I may say at the outset this is the largest of all Runner Beans, and it is also the most prolific. I have gathered pods of it 14 inches in length, and they will all average 10 inches. As a rule they are produced in clusters of three, four, and five, and to see a row of it in full bearing is a grand sight. It is as hardy as any other, and grows very freely. To see the stems and leaves do not give any idea it is such an uncommon bearer, but when in fruit it attracts everybody. Some object to large-podded Beans; I do not, because so long as the large pods are young they are as good in every way as the smaller varieties, and I should never wish to meet with a better flavoured Bean than this variety.

Runner Bean Mont d'Or or Butter Bean.—The Butter Bean is distinct from all others. It is just as hardy, and may be sown at the same time and in the same manner. The pods are quite pale in colour, perfectly stringless, and remarkably fine in flavour. They may be cooked whole, when they form a delicious dish, and I am surprised this variety is not more grown.

Dwarf Bean Cooling's Ne Plus Ultra.—I have tried every Bean I could obtain for forcing, and I find this the best. It is very compact in growth, enormously prolific either under glass or in the open, and it is earlier by many days than any other sort. It is pale yellow in the colour of the seed, and there is no mistaking it. The pods average 4 inches in length, and the prolific way they are produced is very remunerative.

Canadian Wonder.—This is a well-known dwarf French Bean. It is useless for forcing compared with the preceding, as it grows too tall to be easily accommodated, and it is not half so prolific under glass as it is in the open. As a dwarf Bean for open air culture it has no equal. It grows robustly, fruits profusely, and produces the most handsome pods of all dwarf Beans. In this respect it has no rival, and I have often wondered to whom we are indebted for it. It is capital for exhibition, grand for the table, and it should be grown by all.—J. Muir, *Margam.*

FALLACIES IN GRAPE CULTURE—LIME.

Grape-growing has been quite revolutionised within the last quarter of a century. It has not only improved, but extended to a degree little contemplated, and our thanks are due to the larger cultivators for recording their experiments, successful and otherwise, for the benefit of the small growers who have not the means to experiment for themselves; but I question the usefulness of some of the modern doctrines. I allude to the lime theory. Lime has been used in vineries for many years, but applied to the walls as whitewash, and I am inclined to think this is still the best place for it, although I am aware in some instances excellent Grapes are grown where it is reported lime has been extensively used; but it is also a fact, as I will hereafter show, that equally fine Grapes are grown where lime is not used. In order to substantiate this I will review a few of the most successful instances that have been recorded during the last twenty-five years. Since that time Mr. Meredith was on the pinnacle of fame; he was the pioneer of the great growers. The secret of his success was supposed to be the extensive use of crushed oyster shells and the favourable atmosphere of Garston, which is during a "nor' wester" somewhat briny. Very little, if any, notice was taken of his fine loam and the improved structures at command; and not a few gardeners recounted the frowns of their employers because Grapes equal to Meredith's were not forthcoming from antiquated ill-constructed flue-heated places better adapted to destroy vegetation outright than for producing Grapes of any sort. Unfortunately it often happens that employers compare productions without considering advantages.

We will now take the case of Mr. Lane's of Berkhamstead, where another wrinkle was supposed to be gained in connection with the fine Muscats grown there about sixteen or eighteen years ago. The secret of success was supposed to be the abundant water supply to the roots. It soon become generally known that a spring of cold water bubbled up at the foot of the Vine border, which produced a mania for the water pot. As some of us youngsters can testify, it soon become common practice to deluge Vine borders; no matter whether the soil was open or retentive, or the border drained or clogged, on the water had to go, with results that might be expected—wholesale shanking.

A few years later we had another surprise. Mr. Hunter of Lambton Castle Gardens came prominently to the front as a producer of fine Grapes, a position he still retains. There the largest Black Hamburgh was produced, and the reported successes was attributed to the enormous quantities of warm liquid manure applied to the borders. Little or no notice was taken of other advantages, such as new and improved structures, well-drained new borders, &c. More recently we have had the magnificent Black Hamburghs from Eastnor to admire. The secret of this success is, I think, more to the point, as Mr. Coleman recommends those anxious to imitate them to use good loam and crop lightly, but there may be more important lessons to learn at Eastnor, but I think Mr. Coleman's advice is worth accepting. I think the above are as good representative instances of successful culture without the use of lime as can be found with the use of lime.

I will now venture to review a few instances where it is reported that lime has been employed extensively, and should like to hear whether anyone else can see any improvement in the produce from these establishments, because I cannot. Admitting the excellence of the Longleat Grapes, which are too well known to some of us to dispute, yet I am curious to learn if equally fine Grapes could not be produced even at Longleat without the use of lime the same as other places, as we are told fair Grapes were grown at Longleat years ago without lime, and what has been the cause of this state of thing? Taking the case of Mr. Stephen Castle, I beg to inform him that I saw his exhibits in Scotland some years ago. I saw them again at the Aquarium last November. I presume his Scotch exhibits were grown without lime and his Aquarium exhibits with lime. However this may be, I saw no improvement in them, and if lime produces no better results than is seen in his case I strongly advise my friend to abstain from its use altogether.—J. H. GOODACRE.

Notes & Gleanings

EVENTS OF THE WEEK.—On Thursday, the 15th inst., the Royal Society meets at 4.30 P.M., and the Linnean Society at 8 P.M. on the same day. The first spring Show of the season will by held by the Royal Botanic Society at Regent's Park, on Wednesday, the 21st inst., and the Liverpool Spring Show takes place on the same day, followed by the Shrewsbury Show on the 22nd, and the Crystal Palace on the 24th.

—— THE WEATHER IN LONDON.—After a few days of mild weather, Monday and Tuesday in this week were bitterly cold, snow falling freely on Tuesday night. Yesterday (Wednesday) opened mild and bright, but the changing wind is not favourable to a continuation of genial weather.

—— AT the ROYAL BOTANIC SOCIETY'S SPRING SHOW, to be held at Regent's Park on Wednesday next, eighteen classes are provided for Azaleas, Primulas, hardy plants, Roses, Deutzias, Cyclamens, Hyacinths, Lilies of the Valley, Tulips, Narcissi, Crocuses, and Amaryllises, one class also being added for twelve pots of bulbous plants, distinct from any of those already named.

—— THE WEATHER IN SCOTLAND.—"B. D." writes: "With the exception of last night (11th) there has been no frost during the past week. Heavy rain for two or three days brought down the streams in the south of the country in very heavy flood, and a good deal of snow is reported in the north. Saturday was a beautiful day, and several spring flowers bounded into bloom. In the evening the wind returned to the north-east, and it is again very cold."

—— AMORPHOPHALLUS RIVIERI.—This remarkable plant has again flowered in the Oxford Botanic Garden, where the cultural treatment of it has been attended with a continuity of success that few establishments can boast of. When seen a short time since its solitary spadix had exceeded 18 inches in height, and gave promise of as fine an example of its singular attractiveness as any that have preceded it.

—— ADIANTUM SCUTUM.—"S." writes—"Anyone requiring a good Adiantum for house decoration during the autumn and winter months would do well to take this one in hand. It makes a free growth during the spring and summer months when treated to a warm moist temperature, as, for instance, a vinery at work suits it well. Capital plants can be grown in 4½-inch and 6-inch pots. A compost of two parts good fibrous loam to one of peat, adding some old lime, mortar, and sharp sand suits it well. Abundance of water at the roots during the summer should be given. This variety of Adiantum has a graceful habit, yet the fronds are stout enough not to require support at any time. In a cut state the fronds last a long time in good condition."

—— FOR producing a quantity of pure white flowers during December and January the following two varieties of WHITE-FLOWERED PELARGONIUMS, Madame Ernest Ernoul and Niphetos, are excellent. They are both of free growth without being too robust, and flower abundantly if their preparation has been well carried out during the summer and spring months. Strike the cuttings in the early part of February singly in small pots, transferring them eventually to 5½-inch pots, using a compost of two parts loam, one of leaf mould, a slight dash of bone dust, and some sand. Grow the plants near the glass to procure a stocky habit, placing them out of doors as soon as possible, choosing a sunny spot, standing the plants thinly on the ground that they get abundance of light and air. Remove the plants to a cool house before the approach of autumn frosts. During the winter months give them a temperature of not less than 45° by night, with a corresponding rise by day. Supply the plants freely with liquid manure.

—— BARE spaces on the back walls of greenhouses can be rendered bright and useful by planting IVY-LEAF PELARGONIUMS. Such plants being naturally short-jointed, retaining their leaves a long time both during the winter and summer, alike renders them suitable as evergreen plants for the purpose named. Most sorts flower freely, lasting a long time in good condition either on the plants or in a cut state. For the latter purpose flowers from Ivy-leaf Pelargoniums are much prized for vase decoration, either by themselves or with other flowers. By removing a small portion of the soil from the present border and adding some fresh compost not too rich in character the plants will have a better start. Vigour can easily be maintained by applications of liquid manure when the plants are growing freely.

—— LONICERA SEMPERVIRENS.—"For supplying cut flowers nine months during the year," writes "E. M.," "this Lonicera is very valuable. It grows well and flowers freely in an ordinary greenhouse where frost is excluded and its shoots can be trained close to the glass. The flowers last a long time in a cut state, and are very showy when associated either with its own foliage or that of other plants. The flowers are a bright red outside and yellow inside. When the roots are confined to pots copious supplies of water are needed at the roots alternated with liquid manure, as it roots freely. Provide a substantial soil for the roots, composed mainly of loam, when there is a likelihood of its occupying the same pot more than one year, and top-dress occasionally with bone dust, which is a good stimulant as well as a surface root producer. Vigorously syringe the foliage in the evening during summer. From early in March to November flowers are freely produced if attention be paid to the supply of water to the roots, smoking occasionally to keep down green fly, and training the shoots thinly."

—— "J. L." remarks:—"I was much interested in Mr. Muir's article on PLANTING SANDY WASTES BY THE SEA. The plant he means I did not know, but thought it must be another name for our native Grass, Elymus arenarius, which does the same good service in many sandy districts by the sea. I hunted up some of my botanical books, but did not find it mentioned in any of them excepting 'Hooker's British Flora.' Elymus arenarius is there described as follows:—'Root much creeping in loose soil, hence it is of great value, like the Ammophila arenaria for preserving a considerable extent of our own coasts and those of Holland from the encroachments of the sea. The seeds are said to be made into bread in Iceland.'" We have other letters on this subject.

—— WE learn from the schedule just to hand that the SHREWSBURY FLORAL FÊTE for the present year will be held on August 22nd and 23rd, when the usual liberal prizes will be offered. For instance, there is a class for twenty stove and greenhouse plants with three prizes of £25, £20, and £15, besides several others in smaller open classes, ranging from £10 to £1. Fruit is well provided for, no less than £66 being offered for Grapes alone, and for a collection of fruit comprising twelve dishes the prizes are £10, £6, and £3. For vegetables £50 are contributed in numerous classes, the Veitch Memorial medal, and £5 being one of the attractions. Special prizes are also offered by several firms of seedsmen. A spring Show will be held on March 22nd, when provision will be made for all the principal forced plants. This Society is in a most flourishing condition, the balance in the banker's hand from last year's shows being £534, the interest on invested capital amounting to £72. Messrs. Adnitt and Naunton are the Hon. Secs., The Square Shrewsbury, from whom schedules can be procured.

—— EALING, ACTON, AND HANWELL HORTICULTURAL SOCIETY.—The annual meeting of this Society has recently been held, and the Treasurer's balance sheet showed a sum of £37 10s. carried forward to the current year. Two exhibitions will be held in 1888. The summer Show in the grounds of the Royal India Asylum at Ealing on July 11th,

when valuable prizes are offered for cut Roses, open to all comers. On this occasion H.R.H. Princess Mary, Duchess of Teck, has promised to attend and distribute the prizes to the successful competitors in the allotment and cottage garden competitions. Ealing has now some 300 or more allotment gardens of one-eighth of an acre in extent, and many working men are still anxious to obtain one. The usual autumn Show of Chrysanthemums, &c., will be held on November 14th, which it is hoped will take place in the new and spacious Jubilee Hall now in course of erection, and which forms a part of a very handsome block of new municipal buildings.

—— Referring to the Amaryllises mentioned last week, "W. J." remarks that he intended saying, "the nine spikes were on two bulbs, four and five each respectively, not nine from one bulb."

—— Judging Bouquets.—A correspondent writes:—"'Florist,' 'Onlooker,' and others who took part in the bouquet judging discussion, will be glad to hear that their efforts are bringing forth fruit, the Bristol Society having inserted a limit as to size of bouquets in their spring Show schedule."

—— At the ordinary meeting of the Royal Meteorological Society, established 1850, incorporated by Royal Charter 1866, to be held at 25, Great George Street, Westminster, on Wednesday, the 21st instant, at 7 P.M., an address will be delivered by the President, Dr. W. Marcet, M.D., F.R.S., on Atmospheric Electricity, illustrated by experiments; after which Mr. G. J. Symons, F.R.S., will make a short communication on The non-existence of Thunderbolts; elucidated by accounts of searches after them and the exhibition of specimens. The meeting will then be adjourned, in order to afford the Fellows and their friends an opportunity of inspecting the exhibition of apparatus connected with atmospheric electricity, including lightning conductors, photographs of lightning, and damaged objects, and of such new instruments as have been invented and first constructed since the last exhibition. The Exhibition will, at the request of the Secretary of the Institution of Civil Engineers, be open in readiness for their meeting on Tuesday evening, the 20th instant, and will remain open till Friday, the 23rd instant.

—— A horticultural Congress has been organised by the Société Nationale d'Horticulture de France to be held at 84, Rue de Grenelle, Paris, during the progress of the Exhibition, which will be opened on the 25th to the 31st of May. The first sitting of the Congress will take place on May 28th. It is proposed to discuss a variety of questions on scientific and commercial horticulture. Several subjects have already been decided on, including railway tariffs for horticultural produce, horticultural instruction in schools, heating apparatuses, profitable fruit culture, the propagation of hardy plants, and the diseases of Zonal Pelargoniums. Other questions may be proposed for discussion than those included in the programme now issued if notice is previously given to the President of the Committee, M. A. Hardy.

—— Messrs. Wood & Sons send us samples of Orchid peat and loam, both as good as we could desire to use, the former sweet and all fibre, the latter turfy and "unctuous."

—— Gardening Appointment.—Mr. Robert E. Filkins, for the last four years gardener to P. J. Slanger, Esq., St. Mary Cray, Kent, has been appointed gardener to G. Buchanan, Esq., Tower Fields, Keston, near Beckenham, Kent.

—— Testimonial to Mr. Paul of Paisley.—The friends of Mr. Paul (late of Crossflat Nursery) purpose giving him a testimonial, in recognition of his services to floriculture, on the occasion of his removing from Paisley to continue the florist business at his new grounds at Bridge of Weir, nearly midway between Paisley and Greenock. Crossflat, where so much has been done in the improvement of florists' flowers, notably of the Pansy and the Pink, has suffered from the erection of various manufactories in the immediate neighbourhood. Mr. Duncan Keir, The Gardens, Sherwood, Paisley, is the Secretary to the testimonial fund.

—— The Employés of the Royal Horticultural Society.—It has been suggested that the occasion of the vacation of the South Kensington premises by the R.H.S. is one that should be taken advantage of to invite the employés of the Society at South Kensington and Chiswick to an entertainment, by way of expressing some sense of the uniform courtesy and attention they have at all times shown towards exhibitors, the members of the Committees, visitors, and others. The men employed at South Kensington have to leave the service of the Society consequent upon the change of home; and it is rumoured that those at Chiswick may have notice to leave, though the order is not intended to be enforced at present. Before they are dispersed it is thought they should be invited to a supper, and I shall be very glad to receive the names of any gentlemen who would be willing to co-operate by forming themselves into a Committee to carry the proposal into effect.—Richard Dean, *Ranelagh Road, Ealing, W.*

UNDER GARDENERS AND EXHIBITORS.

This seems, in my opinion, to be a subject well worthy of discussion, and it is hoped that under gardeners, as well as others, will benefit thereby. I was very pleased to see Mr. W. Bardney's name approvingly mentioned on page 158 as I had the pleasure of serving under him for two years. We had plenty of work at Norris Green, but the knowledge that we were doing it for a friend as well as a master helped us to pull through the hardest of it with pleasure.

On the other hand it is as well not to lose sight of the fact that men must understand that we, not they, are responsible. Young men are met with who before they have been in a place long know far more than the head gardener does, and seem to feel they should do as they like. Walking through the houses with my employer we found water running to waste through a tap which should have been stopped by a young man who had been syringing, but I was politely told the fault was mine, and if the young man did not carry out my orders I was to discharge him.

In reference to the question of exhibiting, I think that young men should receive some recompense if they work overtime in helping the gardener with his exhibits. I am only a young exhibitor, and I find that I have exceeded my prize money in expenses this year. Where a gardener has all expenses to pay, and stands and other necessaries to provide for showing, his first season will, in nine cases out of ten, be unremunerative; he may win honour, and that is all. But I have endeavoured by kindness to repay all my young men for their assistance, and I believe to their satisfaction, and should I be as successful this year I feel sure they will not have reason to complain that they have assisted me in vain. I hope this discussion will create good feeling and mutual confidence between master and man. As a parting word to those who feel they are, "like I once found myself," in a place not exactly to their liking; let them do their duty as long as they are in it, hoping for better times, which are sure to come.—P. T. D.

Under the above heading your correspondent, "Head Gardener," strives to relieve his mind, and exhibits much sympathy on behalf of his so-called unfortunate brethren. Being in doubt as to the meaning of "Head Gardener's" opening remarks, I must wait for his further elucidation of the subject, and pass on to the more particular part of his paragraph—viz., the denunciation of head gardeners. I need not, I think, remind "Head Gardener" of the fact that we are agreed upon the matter of there being good and bad gardeners, for he admits the fact of winning golden opinions of some. But when he so far forgets the responsibility of his position that he requires the intercession of his employer to settle trifling disputes arising between himself and his subordinates, I confess I shall be greatly astonished if he succeeds in winning the golden opinions of many upon that subject.—J. P. L.

I have read with interest the different letters that have appeared in the Journal about young gardeners and exhibiting, and I cannot help thinking that those who write about their bad treatment from head gardeners are those who do not take much interest in their work. When an under gardener I only lived at two places where exhibiting was done, and then we were at work late at night and early in the morning, and not paid for overtime. We did our work with pleasure, and did not even think about being paid or getting any of the prize money. We did our work because we took perhaps as much interest in it as the head gardener who was receiving the prize money. I think if under gardeners looked at things in the right way, and looked forward to being head gardeners themselves some day and getting the credit as well as the prize money, it would go a long way in helping them over their grievances. No doubt there are head gardeners who are never satisfied with their young men let them do their work ever so well. But such, I think, is not the rule.

Mr. "Spectator" has a good paragraph on the subject of pay for overtime in regard to Grape-thinning. I have spent many an hour of an evening thinning Grapes and never had any pay for it. Some may think I advocate the no pay overtime system, but I am far from that. I do not ask my young men to work at night more than can be avoided, but sometimes Grapes and other things are all wanting attention at the same time, and cannot be seen to in the ordinary working hours. I should not think much of a young man who refused to assist for an hour or two in the evening just to pull things straight. I remember the subject of "Pay for overtime" was taken up in the *Journal of Horticulture* some eight years ago, and I think it was Mr. Gilbert who wrote, "If a gentleman has more Grapes than he can afford to pay for being thinned let them go without thinning." But I venture to think no one with a love for the art could attend to a vinery with the Grapes hang-

ing unthinned all the season; and if he could he would most likely have to bid farewell to the Vines when the time came for sending the Grapes to his employer's table. My advice to all under gardeners is, Never be particular about working an hour or two overtime when asked, and you will not be the losers in the end.—G. HILTON.

I AM very pleased to see that there is at least one head gardener (page 158) who dares and is willing to say a word for subordinates. There are certainly instances where young men have cause to complain of their treatment, but few venture to write to any of the periodicals about it, for the simple reason that they believe there will be so many to criticise and so few to say a word in their favour; but let them remember that the oldest and most experienced writers are criticised, and they must also remember that a little mild criticism will do no harm, but rather improve them; and as everything must have a beginning they may as well begin at once, for the longer they leave the little talent they have undusted on the shelf the longer it will take to polish it when they do reach it down. Many head gardeners seem to think the young men are all very careless, and have no talent. They appear to forget that it is from the acorn that we must expect the Oak, and that it is the schoolboy that must become the professor, and likewise the young man of to-day the future head gardener. Some seem to think that when they are gone there will be nobody fit to take their places. They say, "I can't think how it is that my young men are all so careless." There is a reason, and if the Editor will allow me I will try to explain it in a future issue. They are not all bad, but in many places young men really do become careless from various reasons, but I think if they were to write a little more they would find themselves benefited by it, for there must be many young men in the country with sufficient talent to write a decent letter; and if at first they could not produce anything very elaborate, they would find that with practice and the experience gained by it, they would in time be able to place themselves on a level with some of the best writers of their day. After the encouragement given by "Spectator" on page 147 I think they need not be held any longer in suspense.—A FOREMAN.

METROPOLITAN PUBLIC GARDEN ASSOCIATION.

THE fifth annual report of the above Association has been issued, and from it can be gleaned full information of the work being done in securing open spaces in our great metropolis for the benefit of the masses. They commenced their work on the site of the old Horsemonger Lane Gaol, which to the extent of 1 acre 3 roods was opened as a public recreation ground in 1884. The Association has laboured successfully since then up to the present time. By the aid of donations and subscriptions they have been instrumental in giving to the public use as pleasure gardens nearly 60 acres of open spaces, the majority of which were disused burial grounds.

"The object of the Association is to provide pleasant resorts for the old and playgrounds for the young in the midst of densely populated localities." The report says, "Only those who live among the artisan and labouring classes, or who personally interest themselves in their welfare, can form any conception of the sad condition when contrasted with that of those who are periodically able to change the scene under which tens of thousands of them live and die. Unless in the neighbourhood of one of the parks the only opportunity of relaxation and recreation is in the thoroughfares where every inhalation of air is laden with dust; their children for the most part have no playground but the gutter and the pavement. The majority of those who live in the poor and crowded districts seldom escape from their dismal surroundings.

"Now the provision of garden and playground, though of course no panacea for human suffering and misery, will largely help to brighten the lot of those who live as above described. London is year by year becoming more and more packed, and populated, and extended to a degree that must fill every reflective mind with concern. This can have but one possible effect, and that is to render London less and less the place where the bodily functions can have full and natural play, where bone and musele in the young may be developed, and where constitutions are able to ward off disease and decay."

The Association believes that by securing open spaces it is adopting the best method of meeting the evil which is threatening London, besides finding work for the unemployed, as nearly all the work of the 60 acres above mentioned has been done by the men found in the ranks of the unemployed. At the present time they have other works in construction which is finding daily work for about 300 families. At Camberwell upwards of 200 men are employed in turning a large market garden into a public park, and from a horticultural point this is interesting, as it preserves from the encroachment of the builder a portion at least of those grounds that have in the past associated with the familiar name of "Myatt." Where Myatt's famous British Queen Strawberry grew to perfection, Myatt's Rhubarb, and Myatt's Early Asbleaf Potatoes were once famous, in future will be an open space embellished by gracefully sweeping walks, tastefully planted shrubberies, well kept lawns, and fountains. For some weeks 240 men were employed here, and it is natural to suppose that many from not being used to the work suffered very much, being poorly clad and ill fed. Some have come from a great distance, walking both morning and night from Holloway, Highgate, Bethnal Green, &c., to Camberwell. Many also suffered with bleeding hands, being unused to the work. French polishers, painters, carpenters, in fact men of all trades, have been here struggling to tide over the long and wearisome winter, therefore the objects of his Association are manifestly of a twofold character. 1, To find employment for deserving men, and secondly to expend that labour on some lasting and useful memorial for the masses. By a scheme of a committee of gentlemen acting in concert with the Lord Mayor, all that are employed at Camberwell and deserve help of a permanent character are being assisted. Various methods are being adopted, but the easiest apparently is emigration. Many are availing themselves of this privilege.

Altogether there were 420 disused burial grounds within the metropolitan area; sixty-nine are open to the public as gardens or playgrounds for the young, mainly through the aid of the above Association; 116 burial grounds which at one time existed have entirely disappeared, their sites being now occupied by buildings of all kinds; thirty-eight are used for various purposes, and 197 disused burial grounds still exist closed to the public, and it only requires public sympathy and assistance to transform these sombre grounds into attractive miniature parks.—J. W. MOORMAN.

TOMATOES IN TRENCHES.

A SIMPLE and very useful method of growing Tomatoes in the open air is practised by Mr. J. Forbes in the gardens at Dover House, Roehampton. On a sheltered plot of ground sloping sharply to the south a trench is dug about 4 feet wide, as if preparing to grow Celery on the bed system, and strong Tomato plants planted in suitable soil at the

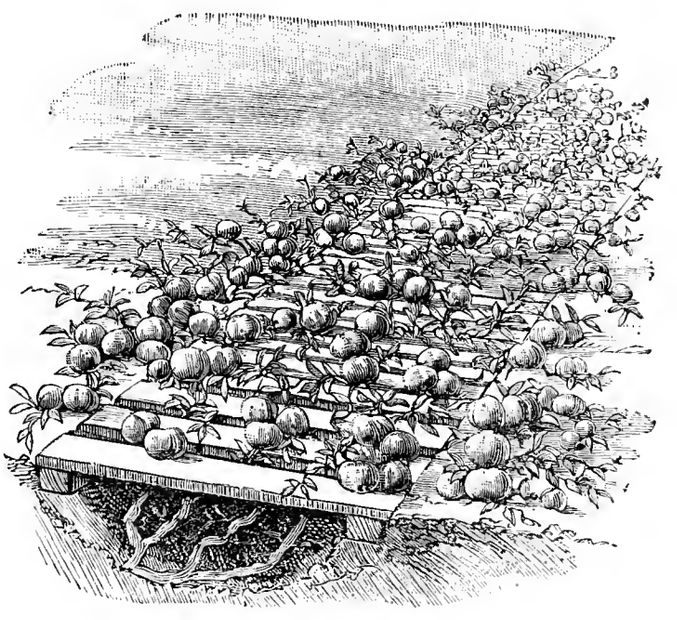


Fig. 26.

proper time. The trench is covered with rough open latticework, through which the plants grow and are trained down to it. With attention to thinning the growth for the admission of sun to the fruit ripe Tomatoes in abundance are produced in the summer in the manner represented in the engraving.

ROYAL HORTICULTURAL SOCIETY.

MARCH 13TH.

COUNCIL MEETING.—A meeting of the Council was held on the date named, when the privileges to be given to the Fellows according to the rate of their subscription was finally settled. Nominations were received of thirty-six new Fellows. The Council interviewed several of the candidates for the Assistant Secretaryship, and after much deliberation determined to appoint Mr. Charles J. Grahame to the post. The agreement for the premises, 111, Victoria Street, was finally adopted, and the seal of the Society was ordered to be attached to it. Sir Trevor Lawrence, Mr. W. T. Thistleton Dyer, Dr. Masters, and Mr. Veitch were appointed a deputation to wait on the Lord Mayor with reference to the projected Show in the City of London this year. The bye-laws, as altered and amended by the sub-Committee, were ordered to be printed and circulated before being presented for adoption. The following gentlemen were requested to act as an Exhibition Committee to draw up a programme for the present year—viz., Messrs. G. Bunyard, Barron, Douglas, Haywood, Laing, G. Paul, Rivers, Turner, Veitch, Walker, and Wildsmith, with power to add to their number. The Council will meet again on Tuesday, March 20th.

SUMMARY OF THE PRIVILEGES OF FELLOWS AND ASSOCIATES FOR THE YEAR 1888.

A FELLOW PAYING FOUR GUINEAS A YEAR IS ENTITLED—

1. To a family ticket admitting to all the Society's Exhibitions and Meetings at 12.30 o'clock, being an hour earlier than the general public.

2. Personal admission to all the Society's Exhibitions and Meetings at 12.30 o'clock, being an hour earlier than the general public.

3. To personal admission daily, between the hours of 10 A.M. and 5 P.M., to the Society's Rooms and to the Lindley Library, except on Sundays and holidays.

4. To personal admission, between the same hours and with the same exceptions, to the Society's Experimental Gardens at Chiswick.

5. The privilege of sending fruit, flowers, and seeds to Chiswick for trial.

6. To a share of such seeds, plants, cuttings, &c., as the Society may have in sufficient numbers for distribution.

7. To purchase such fruit and vegetables grown at Chiswick as are not required for the purposes of the Society.

8. To a copy of all publications of the Society.

9. To the right of voting at all meetings.

A FELLOW PAYING TWO GUINEAS A YEAR IS ENTITLED—

10. To a transferable ticket admitting two persons to all the Society's Exhibitions and Shows.

11. To the same privileges as mentioned in Nos. 2, 3, 4, 5, 6, 7, 8, and 9.

A FELLOW PAYING ONE GUINEA A YEAR IS ENTITLED—

12. To personal admission to all the Society's Exhibitions and Shows.

13. To the same privileges as mentioned in Nos. 2, 3, 4, 5, 6, 7, 8, and 9.

AN ASSOCIATE PAYING HALF-A-GUINEA A YEAR IS ENTITLED—

14. To a non-transferable ticket admitting to all the Society's Exhibitions and Shows at 12.30 o'clock.

15. To be present at meetings, but without voting on any matters relating to the affairs of the Society.

N.B.—Associates must be *bona fide* gardeners or employés in a nursery, market garden, or seed establishment, and must be recommended for election by two Fellows of the Society.

The Society being incorporated by Royal charter the Fellows and Associates incur no personal liability beyond the payment of their annual subscriptions.

The Society's Exhibitions and Shows are held in the drill hall of the London Scottish Volunteers, James' Street, Westminster, about equidistant from the Victoria and St. James' Park stations of the District Railway, and close to the Society's rooms at 111, Victoria Street, and to the Army and Navy Stores.

Note.—Any lady or gentleman desirous of joining the Society may obtain forms and full particulars on application to the Secretary, the Society's offices, South Kensington, up to the 25th of March, and thereafter at the offices, 111, Victoria Street.

GENERAL MEETING.—At a general meeting of the Society held the same day in the Conservatory (Maxwell T. Masters, Esq., M.D., F.R.S., in the chair), the following candidates were duly elected Fellows of the Society—viz., John G. Adams, F. Hayman, A. Lovesay, A. S. Montgomery, T. Y. Moore, William Podger, John Reid, W. G. Rowlett. It was announced that twenty-eight guinea Fellows whose names had been received would be proposed for election at an early date.

COMMITTEES.

THE last of the Committee meetings at South Kensington was held on Tuesday in the conservatory, and the event was not signalised by many remarkable exhibits. Several interesting groups were contributed by nurserymen and amateurs, which occupied a portion of the tables, but neither in quality nor quantity was the display equal to many of its predecessors. Those who remember the grand opening day on June 5th, 1861, and who witnessed the practical termination of the Society's occupation of the gardens on Tuesday last, would perhaps feel inclined to moralise. Cordial wishes were, however, expressed that the change being made might prove the commencement of a more satisfactory and prosperous career elsewhere.

FRUIT COMMITTEE.—Harry J. Veitch, Esq., in the chair, and Messrs. John Lee, Harrison Weir, G. W. Cummins, C. Howe, John Woodbridge, Alfred J. Pearson, Sidney Ford, G. T. Miles, J. Smith, G. Norman, John Burnett, J. Willard, J. Wright, R. D. Blackmore, J. Cheal, and Philip Crowley. The duties of the Committee were very light on this the last occasion of sitting at South Kensington. Mr. W. Divers, The Gardens, Wierton House, Maidstone, sent a collection of nineteen dishes of Apples and Pears and a dish of large Oranges unnamed. The Apples were very good and well kept, the Oranges of excellent quality. A vote of thanks was awarded. Mr. J. Crook, gardener to Mrs. Sherwin, Farnborough Grange, Hants, sent eleven dishes of Apples and two bunches of Lady Downe's Grapes, one grown on a Vine grafted on the Cannon Hall Muscat; the other by the side of it on its own roots, the berries of the former being decidedly firmer and fresher (vote of thanks). A similar mark of approval was granted to Mr. Burnett, Deepdene, for a dish of Calville Blanche Apples grown on a south wall at Deepdene. This fruit was of good size, greenish yellow, deliciously sweet and tender. A vote of thanks was also accorded to Mr. J. Hudson, who sent from Gunnersbury House, Acton, a dish of Golden Noble Apple, beautifully clear, firm, and fresh. A clump of Mushrooms in one cluster weighing 2 lbs. was exhibited by Rev. G. Henslow, and described by him as having been grown from spawn supplied by Messrs. Cutbush & Son.

At the close of the business Mr. Veitch in a few well-chosen words referred to the meeting as the last they would attend there, expressing a desire that all the members of the Committee would meet on the 27th inst. in the Exhibition hall at Westminster, and in every way in their power aid the Society in its future career. Different views might be entertained in respect to the course to be pursued, but there could only be one desire amongst them in seeking to place the Society in the position it should occupy in the horticultural world. Unanimous assent given to the Chairman's remarks.

FLORAL COMMITTEE.—Present: G. F. Wilson, Esq., F.R.S., in the chair; and Messrs. J. Laing, W. Wilks, G. Nicholson, M. T. Masters, H. Herbst, W. Bates, J. H. Lowe, G. Duffield, G. Paul, W. Holmes, R. Dean, H. Ballantine, B. Wynne, C. Pilcher, J. Dominy, H. M. Pollett, A. F. Lendy, J. O'Brien, E. Hill, W. Wildsmith, Shirley Hibberd, and W. Goldring.

Only three certificates were granted on this occasion, but four plants were found worthy of cultural commendations, and four medals were awarded to the nurserymen. A. H. Smee, Esq., The Grange, Wallington (gardener, Mr. G. W. Cummins) showed large panicles of Cyrtopodium Saintlegerianum, one with 106 and the other with 108 flowers, the latter being a much more highly coloured variety, the wings of the lip reddish chocolate, the sepals copiously spotted with a similar colour, and the petals yellow (cultural commendation). An illustration of the plant was given in this Journal, page 255, April 1st, 1886. A vote of thanks was also accorded for a good variety of Cœlogyne cristata. G. C. Raphael, Esq., Castle Hill, Englefield Green, sent a plant of Lycaste plana, which has greenish sepals, and white petals dotted like the lip with rose (vote of thanks). Mr. J. W. Machattie, Newbattle Gardens, Dalkeith, showed flowers of a seedling Rhododendron with bell-shaped white handsome corollas. Mr. H. Perkins, The Greenlands, Henley-on-Thames, exhibited a plant of Dendrobium Cooksoni, Greenland's variety, which had eight flowering growths and some scores of its peculiar flowers, the petals coloured and marked exactly like the lip (cultural commendation). F. G. Tautz, Esq., Studley House, Hammersmith (gardener, Mr. Cowley), showed three Cypripediums, C. Harrisianum vivicans being much the best with dark reddish polished flowers; C. Measuresianum, of a yellow tint; and C. Dauthieri marmoratum. T. Wigan, Esq., Clare Lawn, East Sheen (gardener, Mr. D. East), was awarded a cultural commendation for Dendrobium Wardianum, with a number of growths 3 to 4 feet high, stout, and bearing abundance of large flowers. It was said to have been imported in February, 1887. The small white Cœlogyne sparsa also came from the same garden (vote of thanks).

Sir Trevor Lawrence, Bart., M.P., Burford Lodge, Dorking, contributed some Orchids, besides the new Utricularia, which was certificated. Angræcum Sanderianum was represented by a vigorous plant with four long racemes of white flowers. There was a fine raceme of the remarkably rich-tinted Phaius tuberculosus superbus, and the small Cœlogyne sparsa already noted. H. M. Pollett, Esq., Fernside, Bickley, sent an uncommonly well-grown plant of Odontoglossum blandum, bearing seven racemes of its neatly spotted flowers (cultural commendation); and a distinct variety of O. crispum, the sepals heavily blotched with reddish chocolate, the petals white with one or two spots each (vote of thanks). F. C. Jacomb, Esq., 11, Amherst Park, Stamford Hill, showed a group of Odontoglossums, comprising choice varieties of crispum, Wilckeanum, triumphans superbum, Andersonianum, Rossi majus, macculatum, and Peseatorei, forming a pretty group that deserved some other recognition than a vote of thanks. Mr. Crook, The Gardens, Farnborough Grange, Hants, sent a fresh and beautiful collection of forced Rose blooms, comprising William Allen Richardson, Gloire de Dijon, Fortune's Yellow, Niphetos, Rêve d'Or, and Adam, together with blooms of Primula obconica, Lachenalia pendula, and Tremandra ericæfolia (vote of thanks).

Flowers of Beaumontia grandiflora from Mr. J. Anning, The Gardens, Digswell House, Welwyn, Herts, were greatly admired. They have tubular corollas 6 inches long by 4 in diameter at the mouth, the five broad lobes recurving slightly and pure white (cultural commendation).

Of the nurserymen's exhibits the most important were the following:—Messrs. J. Veitch & Sons, Chelsea, had a group comprising the bright yellow and early Azalea pontica altaclerense, the beautiful free-flowering Boronia heterophylla, loaded with its rich rosy crimson bud-like flowers; Rhododendron Early Gem, one of the præcox style, dwarf in habit, with numerous rosy tinted flowers, very free and useful for pot culture; Primula obconica, Trillium discolor atratum, very dark-coloured flowers, and a white-berried Aucuba japonica (vote of thanks). Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, contributed a large and choice group of Daffodils and hardy flowers effectively arranged (silver Banksian medal). Messrs. R. Veitch & Son, Exeter, sent plants of the dwarf bulbous Tecophylæa cyanocrocus with pure bright blue flowers, and a variety named Leichtlini, in which the flowers are white edged with pale blue (vote of thanks). Messrs. Paul & Son, Cheshunt, had a collection of choice alpine plants and a new H.P. Rose named Lady Alice, of the same style, but paler in colour than Lady Mary Fitzwilliam, also a pretty little Fairy China Rose named Red Pet (bronze Banksian medal). Messrs. Barr & Son, King Street, Covent Garden, showed a large and interesting group of selected Daffodils and hardy flowers (bronze Banksian medal).

CERTIFICATED PLANTS.

Utricularia rhyterophylla (Sir Trevor Lawrence, Bart., M.P.).—An interesting and very distinct Utricularia, which recently flowered in Messrs. Sanders' nursery, at St. Albans. It has long narrow strap-like leaves and tall slender racemes of flowers, the colour being a peculiar

purplish violet. The lower lip-like portion of the corolla is rounded, and about1¼ inch in diameter, with a rich orange blotch at the base.

Saxifraga Frederici-Augusti (Paul & Son).—A neat tufted plant, with small leaves and numerous long drooping spikes of pale yellow flowers. The early flowering and profuse characters of this Saxifraga are its chief features.

Violet The Bride (J. Veitch & Sons).—A pure white flowered variety, very free, and of dwarf compact habit.

SCIENTIFIC COMMITTEE.—Dr. M. T. Masters, Vice-President, in the chair. Present—Messrs. Scott, O'Brien, Pascoe, Ridley, Murray, Smith, Dr. Lowe, Professor Church, and the Honorary Secretary, Rev. G. Henslow.

Hybrid Orchids.—Some cut flowers were forwarded by Mr. Veitch with the following observations:—"The two flowers of Dendrobium micans (hyb.) *Rchb.*, were each raised from a different cross. One from D. lituiflornm and the Assam form of D. Wardianum, and the other from D. lituiflorum and the Burmese form of D. Wardianum. The Assam D. Wardianum, as is well known among the cultivators of Orchids, has shorter and more slender stems, but more highly coloured flowers than the Burmese form, and it will be noticed that the last-named peculiarity is perpetuated in the hybrid. We may also add that the seedling from the Assam form has more slender stems than that from the Burmese form, which like its parent has the more robust stems and paler coloured flowers."

Hybrid Phalænopsis.—Mr. Veitch also sent a supposed hybrid as being a possible cross between P. grandiflora, *Lindl.* (P. amabilis, *Bl.*), and P. rosea. The above specimens were entrusted to Mr. Ridley for examination and report.

Cattleya Trianæ, abnormal forms.—Mr. O'Brien brought flowers of this plant received from the gardens of Mr. W. Furze, Roselands, Teddington. They were curious on account of their arising from different pseudo-bulbs, but all having the median sepal in a petaloid condition. In one flower all the parts were present; whereas in two others the petals were absent, but apparently partly "incorporated with the median sepal." Peculiaritics also resided in the column. Dr. M. T. Masters undertook to examine and report upon them.

Strophanthus madagascariensis (Daruty).—This is a new species, named and sent by Dr. Daruty, of Mahèburg, Mauritius. The genus is African, of the order Apocynaceæ, or "Dogbanes," the name being derived from the cord-like appendages to the corolla. It is remarkable for the structure and poisonous properties of the seed. The latter somewhat resembles that of the Dandelion, but is larger, and has the silky hairs distributed down the greater part of the shaft. The natives crush the seeds, from which a red oily mass is obtained, with which they smear their arrow points. Several varieties or species are known, but more material is required for an accurate discrimination of them. As a drug, the active principle Strophanthin, is found in all parts of the pod as well as the seed, and is very powerfully toxic, one-fiftieth of a grain killing a large dog. It seems likely to prove to be a valuable remedy for deranged action of the heart. (See Christy's "New Com. Pl. and Drugs," No. 10, p. 7.)

Marraca, or *Mercurio-Vegetal root.*—Mr. T. Christy sent a specimen of this medicinal root of Franciscea uniflora, the bark of which contains the active principle Francisceine. The root is of a woody nature, tapering, and of a light brown colour externally, being of a cinnamon-brown within. From Dr. J. Hutchinson's experience it would appear to be a valuable new remedy for rheumatism, especially of a certain type.

Blue Daisy (?) from Tangier.—Dr. Lowe exhibited a drawing of a small plant, of some 2 to 3 inches high, received from Tangier. The question was raised as to its identity with the Blue Daisy found by Messrs. Hooker, Maw, and Ball on the Atlas Mountains. Dr. Masters undertook to investigate the matter and to report.

Scilla "Droppers."—Mr. Henslow mentioned as a result of a microscopical examination of the attachment of the bulbils, found growing on the inside of the tubular leaf-sheath of specimens exhibited by Dr. Lowe at a meeting of the Scientific Committee (see *Gardeners' Chronicle*, October 15th, 1887, p. 475), that there was a vascular union between the bulbil and the vertical cords of the sheath, consisting of a plexus of tracheids, which entered the base of the bulbil on the one hand, and communicated by arches to the cords of the sheath on the other. The bulbil, therefore, originated in the depth of the tissue of the sheath, so that the adventitious rootlets sometimes penetrated beneath the inner epidermis, which they ripped up; at other they pierced through the sheath to appear externally (see *Gardeners' Chronicle*, March 3rd, 1888, page 276, figs. 45, 46).

Pears, Cause of Unsymmetrical Growth.—Mr. Henslow explained the cause of so many Pears being unsymmetrical about their axis. This was only the case when the stalk was not vertical and the want of symmetry increased with its obliquity. He attributed the growth to the effort of the Pear to meet the strain imposed upon the stalk as the fruit increased in weight. The two forces to which it is subjected are gravitation, or the weight acting in a vertical direction, and the tension along the stalk. The resultant of these two forces tended to wrench the fruit from the latter at its point of insertion at the base of the Pear. To meet this strain, the fruit thickened in the opposite direction, so that the "hump" is always at the base and on the outer or opposite side of the fruit. The effect often extends over the whole of the outermost half of the Pear, so that a vertical plane at right angles to the one in which the stalk lies cuts the Pear into two very unequal portions. When the stalk hangs vertically, as is more usually the case in Apples and in Oranges, there is little or no obliquity, so that the Pear grows symmetrically round all points of its axis, the radii of the circular transverse sections being all equal.



SELECT ORCHIDS FOR AMATEURS.

IN the following list a selection is given of the most useful, distinct, and easily grown Orchids with which amateurs might commence forming a collection. Brief cultural directions are given for each genus, with the characters of the plants, the time of flowering, the native countries, and the temperature best suited to them. They are in the latter respect divided into three groups. Those recommended for a warm house require a temperature ranging from 60° as a minimum in winter to 80° as a maximum in summer; the temperature of the intermediate house would similarly range from 55° to 75°, and that of the cool house from 45° to 65°, allowing a few degrees more than the highest named in hot weather with free ventilation, but in the cool and intermediate houses the temperature should not be permitted to fall below the minimum given in each case. For the warm house a slight fall in temperature will not be so injurious as the employment of excessive fire heat. The Orchids recommended are in the majority of cases the cheapest of their respective genera, except where some remarkable character renders them particularly worthy of culture. The names of the species or varieties are given in italics at the end of each paragraph.

ACINETA.—Strong-growing evergreen plants with short pseudo-bulbs and large leaves. Flowers large, showy, yellow, white, and purplish brown, spotted with rose or red, in drooping racemes from the base of the pseudo-bulbs. Mexico and Tropical America. Baskets. Warm house. March-July.—*Barkeri* and *Humboldti.*

ADA.—An evergreen Orchid; free flowering and easily grown plant, with short ovoid pseudo-bulbs and narrow leaves. Flowers bright orange in erect racemes produced with the growths from the base of the pseudo-bulbs. A. aurantiaca is the only species in cultivation, and is a native of the Andes in Grenada, where it is found 8500 feet above sea level. Pots. Cool house. Winter.

AERIDES.—Evergreen plants with stems 1 to 3 feet or more high. Leaves narrow, distichous (two-ranked). Flowers small, fleshy, white and rose spotted with crimson or purple, occasionally fragrant; in racemes from the axils of the leaves. Tropical India, Manilla, Philippine Islands, Japan. Warm house. Pots; sphagnum and potsherds. Spring and summer.—*affine, crassifolium, Fieldingi, japonicum* (cool house), *nobile, odoratum, quinquevulnerum, suavissimum* and *virens.*

ANGRÆCUM.—Evergreen plants, with stems from a few inches to several feet high, and distichous leaves. Flowers white or cream coloured, mostly small, in long graceful racemes, but occasionally very large, as in A. sesquipedale, which has spurs exceeding a foot in length. Tropical West Africa and Madagascar. Warm house. Pots or baskets; sphagnum.—*citratum, eburneum, falcatum* (cool house), *Sanderianum, sesquipedale.*

ANGULOA.—Deciduous plants, with large ovoid pseudo-bulbs and bold leaves. Flowers large, fleshy, and showy; single on scapes from the base of the growths; colour yellow and white. Peru and Colombia, at elevations in the Andes. Pots; peat. Cool house. Summer.—*Clowesi, uniflora.*

ANŒCTOCHILUS.—Small evergreen plants with dwarf stems 1 to 6 inches high and extremely beautiful leaves; light and dark green, purple, or bronze of velvet-like texture, veined with gold and silver. India, Borneo, Java. Warm house. Rather difficult to grow, as the foliage is very delicate. They succeed best in shallow pans of peat, sphagnum, and sand, covered with a bell-glass, to be occasionally removed or elevated, and carefully watered. There are many species and varieties, but the following are the strongest—*Lowi* (Dossinia marmorata), *regale* (setaceum), *Petola* (Macodes Petola).

ANSELLIA.—Evergreen plants. Stems 2 to 3 feet high. Leaves narrow, distichous. Flowers in panicles; yellow spotted brown. Tropical Africa. Pots; peat and leaf soil. Warm house. Winter. —*africana.*

ARUNDINA.—Evergreen plants. Stems slender, 2 to 6 feet high, clothed with narrow leaves. Flowers showy, rosy crimson, in terminal racemes. India. Pots; peat and loam. Warm house. Summer.—*bambusæfolia.*

BARKERIA.—Deciduous plants, with slender leafy spindle-

shaped stems. Flowers in terminal racemes, magenta, rose and white, and dark rose, very beautiful. Mexico and Guatemala. Somewhat difficult to grow, requiring a warm sunny and well ventilated position when growing, and a cool position for resting. Blocks. Winter—spring.—*cyclotella, elegans, Skinneri.*

Bletia.—Deciduous, with short thick pseudo-bulbs and long narrow leaves. Flowers in scapes a foot or more long, purplish rose or bright rose. China, Japan, West Indies, and New Grenada. Pots; loam, leaf soil, and sphagnum. Cool house. Winter and spring.—*hyacinthina, patula* (intermediate house), *Shepherdi, Shrattiana.*

Brassavola.—Evergreen plants, with thick linear Rush-like leaves, or thickened spindle-shaped pseudo-bulb-like stems. Flowers mostly singly in scapes from the base or terminal, sepals and petals greenish, lip large and white, deeply fringed in B. Digbyana and fragrant. Mexico, Central America, and West Indies. Warm or intermediate house. Blocks or baskets. Autumn and spring.—*acaulis, Digbyana, glauca.*

Brassia.—Evergreen, short ovoid dark pseudo-bulbs, and long narrow leaves. Flowers in racemes, yellowish green, yellow and spotted. Curious and distinct. Mexico, Brazil, New Grenada, West Indies. Pots; peat. Intermediate house. Summer.—*Lanceana, Lawrenciana, maculata major, verrucosa grandiflora.*

Broughtonia.—Evergreen, with ovoid pseudo-bulbs and long narrow leaves. Flowers in terminal racemes, rich crimson. Jamaica, on exposed rocks. Block with moss. Warm house. Summer.—*sanguinea.*

Bulbophyllum.—Mostly interesting for the strangely formed flowers, but of little horticultural value. India, Borneo, Java, Siam, &c. Blocks or baskets. Warm house.—*barbigerum, Lobbi, siamense.*

Burlingtonia.—Evergreen, short ovoid pseudo-bulbs, broad leaves. Flowers in loose drooping or erect racemes from the base of the pseudo-bulbs, fragrant, white, flushed or streaked yellow or rosy purple. Demerara, Brazil. Baskets or pans. Sphagnum and potsherds. Warm house. Spring and summer.—*candida, decora, fragrans, venusta.*

Calanthe.—Useful plants that can be culturally divided into two groups, one comprising C. masuca and C. veratrifolia, evergreen, with large pseudo-bulbs, broad leaves, and purplish or white flowers respectively; the other including C. Veitchi and C. vestita, which are great favourites, deciduous, with large conical pseudo-bulbs and long racemes of deep rose or white flowers. They all require pot culture and similar soil—namely, loam, leaf soil, and a little old manure; but the deciduous species require a well marked season of rest after flowering. They are widely distributed in the tropics of the old world, and require a place in a warm house when growing. The evergreen Calanthes are mostly summer flowering; the deciduous are winter flowering.

Cattleya.—Favourite and useful Orchids, evergreen, with pseudo-bulbs of various sizes, short and ovoid, or long and spindle shaped, with thick broad dark green leaves. Flowers mostly large and very handsome, several together in short racemes from the tops of the pseudo-bulbs, generally before the growth; sepals and petals white, mauve, or rose, with rich crimson and magenta lips, frequently fragrant; bright lemon yellow and very sweet in C. citrina. Pots or baskets, with blocks for Acklandiæ, citrina (which grows downwards), and Walkeriana. Brazil and Central America. Intermediate house. Plenty of light. In flower all the year, the following providing a succession and comprising the most showy. January to March, *Percivaliana* and *Trianæ;* March to July, *Acklandiæ, citrina, gigas, intermedia, Mendeli, Mossiæ, Skinneri;* July to September, *bicolor, crispa, Eldorado, Loddigesi;* September to December, *Dowiana aurea* and *maxima Warscewiczi.* There are numberless varieties of Mendeli, Mossiæ, and Trianæ, and these are all referred to the species labiata, the true autumn flowering form of which (labiata vera) is very scarce.

Chysis.—Deciduous, with thick spindle-shaped stems. Flowers in long racemes produced with the growth, handsome yellow and white streaked crimson. Venezuela, Mexico. Pots. Intermediate house. Spring and summer.—*aurea* and *bractescens.*

Cœlogyne.—Evergreen, globular or ovoid pseudo-bulbs and narrow leaves. Flowers in graceful racemes, white and yellow, or of strange brownish tints. Indla and Malayia. Pots. Intermediate house. February to May.—*cristata*, one of the most useful Orchids grown, *cristata Lemoniana, ocellata maxima.*

Colax.—Dwarf evergreen Orchids, with small ovoid pseudo-bulbs. Flowers two or three in a raceme, white, marked with rich purple, very pretty. Brazil. Pots. Intermediate house.—*jugosus.*

Comparettia.—Slender pseudo-bulbous evergreen Orchids, with crimson and rose-coloured flowers in graceful racemes. Peru and Central America. Baskets or blocks. Intermediate house.—*falcata.*—L. C.

(To be continued.)

PACKING FRUIT.

I had really no intention of replying to your correspondent, "R. W.'s" criticism on my paper on packing mixed fruits. However, after reading his reply to Mr. Treseder and "W. H." I thought perhaps it would be as well to answer him now, and set his mind at ease.

I wrote the paper in question at the request of a particular gardening friend, who is a constant reader of the Journal and a keen observer; and if I remember rightly I gave a plain statement of facts, describing the method I adopted in packing mixed fruits and the materials I used. I also stated that paper shavings and clean dry moss were recommended by some gardeners of experience for packing, but I neither recommended nor condemned them. I pointed out, however, that soft hay could be procured in sufficient quantity in most places, an advantage which could not be said in favour of good moss.

Your correspondent asks "why I prefer soft hay to paper shavings?" Well, to satisfy his curiosity, I will use his own words in answering the question, and say, Soft hay, such as is used here "is in my opinion preferable in all respects." It is convenient and easy to pack with, and the fruits packed in it travel in good condition to their destination. What more, I would like to ask, is required, whether the material used is dry moss, soft hay, or "R. W.'s" paper shavings? My paper dealt with packing mixed fruits (which your correspondent informs me "I spared no pains in describing"), but when packing Grapes by themselves I use the same material and a plain box without divisions of any kind in preference to "R. W.'s" favourite box with partitions of various sizes, "which he ventures to say will travel both by land and water if kept right side up. One side of the bunch at the journey's end will be looking almost as perfect as when they were cut from the Vines." We are here called on to accept "R. W.'s" ipse dixit as a settlement of the question. "R. W." writes:—"I also take exception to Mr. Pettigrew's mode of Peach packing. He recommends the use of two boxes, tin and wood. The former I do not find necessary. The box I use is made of wood divided in various sized divisions suitable for Peaches and Nectarines." Your correspondent makes a mistake in saying "I recommend the use of two boxes, tin and wood," in packing Peaches. I recommended nothing in the paper in question. I said the Peaches were packed in tin trays by themselves, which fitted neatly into a wooden box, and described the *modus operandi* of packing; but, as usual, your able critic finds a better plan, which I leave your readers to peruse.

In his concluding paragraph he remarks:—"I may also remark in the dispatch of fruit, should there be two or three boxes to be sent to the same address, I invariably find the fruit in better condition when tied together in one package than if travelling singly." Just so, "R. W.," I suppose the fruit is improved by travelling in bulk.—A. Pettigrew, *Cardiff.*

THE PLÂS, TANYBWLCH, NORTH WALES.

To the modern tourist in Wales the name Tanybwlch is one of the most familiar, thanks in no small degree to the wonderful Toy Railway between Portmadoc and Ffestiniog that was constructed some years ago for the conveyance of slates, &c., from and to the quarries at the latter named place, some of which bearing his name are the property of W. E. Oakeley, Esq., who is also owner and occupier of The Plâs.

The Toy Railway referred to is really a wonder, the permanent way having the appearance of an ordinary small tramway, such as is usual about coal and other works, the guage being 2 feet only, the entire length of line being about 13 miles and rising in that distance 700 feet. The small engines that perform the journeys draw up this gradient fifty to sixty or perhaps even more empty slate waggons, besides goods trucks and passenger coaches, and are curiosities in the engineering world. They were designed by Sir Robert Fairlie, and are called "double bogie engines," with chimneys at each end, and are admirably adapted for such mountain work as they perform. It may be interesting to state that until their introduction horses were employed to draw the empty trucks up from the wharf at Portmadoc and were themselves carried down in the train, which was impelled downwards by its own gravitation. It is amusing to watch the train on its winding course, first appearing on the edge of a precipice and as fast disappearing again, only to reappear and play the same game of hide-and-seek the whole of its mountain track. The sharp curves give to the train in passing over them a most grotesque form. In one spot a horseshoe is very nearly described, and in another the letter S; indeed, a long train can in one spot perform the feat of describing two such letters at the same time. Looking out of the train as we approach Tanybwlch station we see the roof only of The Plâs house and stables immediately beneath us, so much so that the timid would instantly anxiously exclaim for the safety of the inhabitants.

Looking down the mountain side on leaving the station we see a beautiful lake several acres in extent almost surrounded by woodland, grand in all seasons, even in dreary winter. The Oak, which grows here natural, ever reluctant to cast its foliage, which though somewhat sombre, adds much to the general effect. It has been our privilege to enjoy the scene in various seasons; we can, however, only chronicle the fact that our measure of enjoyment was full to overflowing, and that our pen refuses to do more. The lake, though really artificial, made by Mr. Oakeley, was already formed by Nature, and only required a few yards of embankment, which has been made in such a manner, under the direction of Mr. Roberts, the much respected gardener, that we should not suspect any interference with Dame Nature's work. The water is supplied by mountain streams that never fail, and the overflow

again forms a series of waterfalls on its course through the grounds into the river in the plains below.

The carriage drive crosses this stream by a picturesque moss and Fern-covered bridge, ornamented by several sham arches, probably built early in the eighteenth century. Near by date 1727 is carved in the rock with the initials "E. G." and "J. M. N.," to which, however, we attach no superstitious meaning. Very near the entrance gate is situated the "Oakeley Arms Hotel," kept by Miss Rae, where the tourist is sure of good fare, but where we cannot linger but to mention a pair of Hollies, Gold and Silver, that annually confer upon the inventor of shears—well, not a blessing; their girths respectively at base being 3 feet 6 inches, and 4 feet 6 inches, and but for the misuse of the useful instrument referred to would have been noble specimens, probably in or near their second jubilee.

An old lady beaming with smiles, and crowned with the historical "beaver hat," trips it to open the gate for us, as we re-enter the drive, and to salute us with a hearty "Boreu Da"—Good Morning. We are very soon in the heart of the pleasure grounds, and surrounded on all hands by magnificent Conifers, which thrive here uncommonly well. Cryptomeria japonica, upwards of 50 feet high; Cedrus atlantica, about the same height; Cupressus sempervirens stricta, nearly as tall, and numbers of very fine Irish Yews, and best Conifers in variety, all having the appearance of being perfectly at home. Some of the Silver Firs, which are represented by Abies lasiocarpa, grandis, Nordmanniana, &c., are perfect pictures, one huge specimen measuring, at 2 feet from the ground, 14 feet in girth. Abies Douglasii in various exposed positions demonstrates its adaptability for such situations to satisfaction. This is a favourite with Mr. Roberts for mountain work.

There are also scattered about many grand old Oaks, reminding us that the glory is not all of to-day, for with these we are face to face with ages past and to come, one of these near to measured, at 4 feet from the ground, 17 feet, and gazing upon its gigantic grandeur we felt glad that ships are built now of other material than English or "Welsh" Oak. Very fine Lime trees skirt the grounds where, on all hands, we find, attaining great heights the Eucalyptus, some nearly 40 feet, and would be much higher but for the strong winds that frequently carry off their leaders. The majority of these have been planted eight years, and some more than that, a fact that speaks well for the climate here, and when we add that hedges of Fuchsias thrive with Chamærops and others of the hardier Palms; Benthamia fragifera, in splendid condition; Myrtles, growing like Privet; rich Bay trees here, there, and everywhere, some of which are 100 feet in circumference; Camellias in large quantities, annually bear loads of bloom, with no more trouble than Laurels or Rhododendrons; immense specimens of Aucuba, 60 feet and upwards in circumference; large wall spaces are covered with Magnolias, that flower most freely, and Wistaria blooming twice annually; and further, when we state that Liliums, Dahlias, and kindred subjects are wintered in the open ground, our readers will form some idea of the climate in this favoured spot, and imagine for themselves the wealth of vegetation here found.

Wending our way onwards we come upon a lovely spot, sheltered on all sides except from the sun, where luxuriates a grand piece of the seldom seen Dimorphanthus mandshuricus, and not far off are several plants of Grevillea robusta, which I fear, however, Mr. Roberts will not succeed in keeping long. A plant of Berberidopsis nepalensis, 48 feet in circumference, is a grand picture, as is also Berberis Fortunei, near to, and Andromeda axillaris. Gynerium argenteum, "Pampas Grass," crowded with strong plumes, form a background to many of the herbaceous borders, which are a grand feature here, and upon which we might dwell at great length, but must for the present refrain, with but a reference to the splendid effect of Sedum spectabile, extensively used in these borders, and as edgings to the large shrubbery and other borders. Neither can we dwell upon the collection of Rhododendrons that comprises the very best hybrid varieties known, or the Azaleas, Ghent and Mollis varieties, equally fine, but following in our conductor's train we ascend on to the terrace immediately fronting the mansion, the front of which we find covered with Clianthus puniceus, Aristoloehia sipho, Myrtle, Magnolia, &c., and at intervals on the terrace are stood Bays in tubs, and amongst them a pair of Kalmia latifolia, large and healthy looking. The view from here is exceedingly fine, and we would fain rest and enjoy it. Lord Lyttleton very near the same spot said, "With the woman one loves, one might pass an age in this vale and think it a day;" and in writing to a friend he said, "If you want to live long and renew your youth come and settle in this neighbourhood. Not long ago there died here an honest Welsh farmer who was 105 years of age. His youngest son was eighty-one years younger than his eldest, and eight hundred persons, his lineal descendants, attended his funeral."

We take a peep over the balustrade on to another terrace immediately

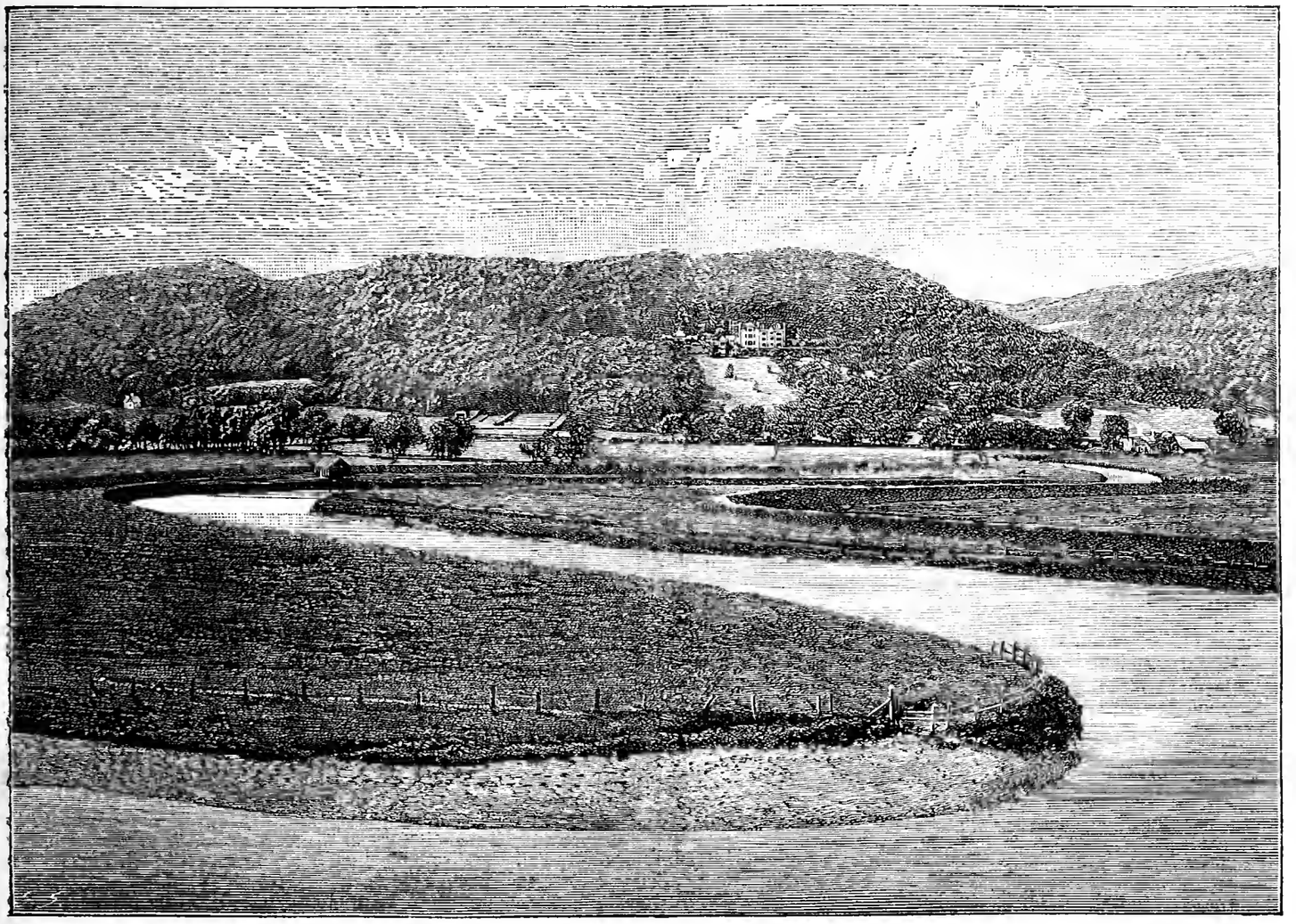


FIG. 27.—THE PLÂS, TANYBWLCH, NORTH WALES.

below—which is also a farewell glance—at a number of beds of large proportion that have been for several years a home for the most elaborate carpet bedding in the principality. The beds are now being turfed down, and carpet bedding entirely discarded, at least for the present. We must take the opportunity of paying tribute to Mr. Roberts for the very excellent manner in which he managed this department. His originality in design, and capital taste in detail, balance of colours, &c., would compare not unfavourably with the achievements of our London parks in these particulars.

In the glass departments general excellence prevails. Immense crops are the rule every year with Peaches, Nectarines, and indeed Grapes. Of the latter there is one young house especially in splendid condition, consisting chiefly of Hamburghs. A thousand Peaches is certainly a large number of good table-sized fruit to be the product of five trees, and amply bears out my statement as to heavy crops. The varieties grown are the old Royal George, Noblesse, Bellegarde, &c.; Pine Apple Nectarine is the favourite. The vineries afford a supply of another delicious fruit besides Grapes—namely, the Passiflora edulis, which is grown on the back walls, and which is deservedly popular here for dessert. Cut flowers being much in demand as in most establishments, we find Mr. Roberts resorting to many "artful dodges" for a supply. In one house recently used for tender bedding plants we find healthy Gardenias planted out, a safe resource for a few choice buds. Immense plants of double Ivy-leaved Pelargoniums on back walls, and coming outdoors we find in the kitchen gardens long ranges of earth pits, full of Violets, Marie Louise, Comte de Brazza, Victoria, and Odoratissima, literally masses of flower, though gathered daily. There are large quantities of Strawberries grown of the very best kinds, and among them Loxford Hall Seedling, a grand variety where it condescends to succeed as it does at The Plâs. We will discuss the vegetables indoors, whither we are going, but not without a passing note on the long borders of Carnations of sorts that are also favourites and thrive like weeds. Directing our steps towards Mr. Roberts' cosy cottage, through frames and Melon ground, we are favoured with the "outward and visible sign" of a Melon, that is to say the rind, the interior having just been discussed elsewhere, and we were assured that though cut three months it was quite as good as in the height of the season. I fancy I hear some old gardener remark, "Ah! it must have been 'William Tillery!'" Guessed again. Here is another testimonial to the good old variety. Shortly afterwards we retrace our steps, after heartily thanking our host and hostess, but we find the path towards the station very steep, and we puff as hard as the "double bogie" that again bears us on our homeward journey.—BRADWEN.

THE BULB MITE.

HAVING read the article by "Observer" on page 152, I venture to add a few remarks upon Eucharises affected with the mite. I am fully convinced such a mite exists, not only on Eucharis, but also Vallotas, Pancratiums, and Amaryllises. Until recently I have, like others, discarded such plants as were affected with the mite, but often experience teaches us to modify our views and methods. A few months ago, in paying a visit to a previous situation, I asked if the Eucharises had recovered from the rough usage they experienced when under my charge. Some few plants were diseased, and were treated as follows. I turned every bulb out and scraped away every particle of the infested portion, then washed each bulb singly in warm water, afterwards soaking them in a strong solution of Fir tree oil for several seconds. I then placed them all on hot-water pipes to dry thoroughly, repotted several in a 12-inch pot, and conveyed them to a stove, merely placed on dry stages where moisture would readily evaporate. These were watered and kept rather dry for a considerable time. When a few weeks had elapsed signs of growth were promising, but I was not satisfied with their puny leaves. As soon as they had advanced a little I prepared quite a thickened mixture of lime, soot, and water, but added more lime than soot, and watered them thoroughly three times as they became dry. The surface remained undisturbed. After witnessing their vigorous and healthful appearance some time ago I fully believe the lime and soot exterminated the mite. From my observations of bulbous plants, and particularly of Eucharises, injudicious watering when the plants are in a low temperature encourages this pest greatly.—D. P., *Lockinge Gardens.*

THE discussion in your pages upon this subject has reminded me of a conversation I had with an old manager of a noted nursery in this county (Sussex) a few months ago. In passing through a house chiefly filled with fine Eucharises, he asked if I had ever seen the Eucharis mite, and replying that I had not he said, "I have, and my opinion is that it is caused by too much water." The excellent condition of the plants in his charge was sufficient proof that they were in the hands of one who understood their wants. I am one of those, indicated by Mr. Haggart, who are expected to grow Eucharis without having an unlimited command of heat. For six of the twelve months they are chiefly under the shade of the Vines, and in the autumn and winter they have light quarters in a house used for Cucumbers in the early part of the year, but where the temperature often falls below 50° in the short days of winter. Though the plants do not bloom so regularly as they do where they have a good position assigned them all the year round, still the result is fairly satisfactory. Your correspondents, Mr. E. Beckett and Mr. A. Haggart, have proved that Eucharises can be well grown with less heat and moisture at the roots than is sometimes advised, and I quite agree with the latter, that much mischief would soon be brought about by applying lots of water without, at the same time maintaining a high temperature.—A WORKING GARDENER.

HAVING a short time ago visited the well kept gardens at Aldenham House, Elstree, under the charge of Mr. Beckett, I can fully endorse the remarks recently made respecting the collection of Eucharis growing in that establishment. They are marvels of cultural skill. After so much discussion in the *Journal of Horticulture*, it is interesting to meet with a collection where there is no appearance of the mite (which has destroyed so many collections). I feel convinced that if all plants were treated in the same manner as those at Aldenham, we should soon hear less of the Eucharis mite.—C. B.

GARDENERS' DIARIES.

I WILLINGLY send a few lines in support of what "J. H. L." says on the above subject. When an under gardener I kept a diary for several years, and I can assure all young gardeners who wish to get on and gain knowledge of the profession that there is nothing will help him more towards that end than spending an hour or more of an evening writing down what has been done during the day in the various departments of the garden. Besides, if he does not happen to be a good hand at writing and spelling this will help him in becoming better at both. The young men in the bothy here are keeping diaries.—G. HILTON.

SELF-IMPROVEMENT.

I WAS delighted to read the article in the *Journal of Horticulture* of February 23rd, page 155, on the subject of self-improvement of gardeners, especially the last paragraph recommending the study of shorthand to young gardeners. I heartily support that recommendation, because I know from experience that shorthand or phonography is a useful adjunct to a gardener's education, for by its aid he is enabled to record observations and make memoranda in a quicker and readier manner than in ordinary longhand writing. It is invaluable for keeping a diary, for making extracts from books, papers, and periodicals, the very habit of doing which is valuable exercise for the memory. One thing especially I have found it helpful in, and that is for recording any remarks, data, or observations on the labels used for pot plants or any other purpose. Take Chrysanthemums, for instance. The name of the variety could be written on one side of the label in longhand which everybody could read, and on the other side could be written in shorthand the date of potting, top-dressing, taking the buds, or any remarks which would be useful. The habit of doing this would be found an education of itself to young gardeners; they would often consult the labels and be surprised at the information they gave. There are many ways in which shorthand would be useful, not the least of which is correspondence with gardening friends who may have learnt the art. There are some people who think it is waste of time for a gardener to learn shorthand, but such have never acquired the art, and therefore cannot judge. I commend it to all young men engaged in gardening, feeling sure they would benefit by it.—E. D. S.

I MUST thank your correspondents for the advice which we have had from time to time in the Journal, and I for one will try and advance from being an illiterate under gardener to an educated gardener. I do not, however, think that we shall ever be able to attain to such high knowledge as some of your writers think we ought. For instance, we find "North Briton," on page 171, advising us young men to learn French and Latin, whereas the majority of under gardeners have not mastered the English language. Many of us were called upon to earn our own livelihood at the age of twelve, and in two or three years, by steady advancement, we secured situations as under gardeners. Where are all these higher attainments to be reached? I confess that in our bothies hours are wasted which ought to be turned to better account. The time spent in card-playing, &c., might be better employed in improving our writing, spelling, grammar, and drawing, as well as keeping a diary of the work.—E. B.

IN the *Journal of Horticulture* of February 9th, "Experientia docet" referred to some gardeners holding good positions not being able to write an intelligible letter to their employers. I can fully endorse the statement. I know of one case in particular where the person, after having been resident for five years, could not write his own address correctly; who also sent parcels to his employer directed, "Per Parsle Posts;" who when writing (or rather trying to write) a label would do it in such a miserable form that even himself in five minutes after could not detect what letters his fancy ups, downs, and beyonds were meant to resemble. I have seen the same person label-writing with a catalogue lying before him, copying as anyone would have thought letter for letter; but no, his memory seemed to forsake him somewhere between the catalogue and the label, which would cause him to drop a letter altogether or put in some very doubtful substitute. The certificates his assistants received when they thought of changing were remarkable, and they were always ashamed to show them, thinking no doubt that others might be apt to judge the men by the master.

I have mentioned this case as it is the worst I know, but there are others who are very little better. It is disgraceful to see such men as those filling high positions in our midst, whilst well-educated and

thoroughly practical men have to stand aside for want of a fair field. I feel confident that if a Society were started on principles such as "Gamo" proposed in the issue of February 23rd, it would prove the most effectual way of removing all those who have been, as "Gamo" puts it, "pitchforked into good places." Then will be the time when thoroughly practical gardeners, with a fair amount of learning, whether self-taught or otherwise, will stand a better chance of recognition than now.

I trust some of our most able gardeners will take up and try and further the movement, and I am sure all with any interest in themselves and their profession will be only too glad to put their shoulder to the wheel.—TENTO.

CROPS THAT PAY.

RHUBARB.—During the past few years many have engaged in the culture of Rhubarb, but there is still room for others, and beginners need not despair that if they embark in this undertaking they will fail to find buyers for their produce. At the present time the demand is increasing, and the supply is not equal to it, consequently it realises moderately high prices early in the season. There is generally a scarcity just preceding the first pulling of the outdoor crop. This might be met without a large outlay on the part of different growers, or fresh ones. What is most needed is large quantities just preceding the first gathering of the outdoor crop. Every grower in the northern counties would do well to erect large sheds or houses, or cover the roots by some means, whereby they could supply a good quantity just before the other was ready. It is surprising how rapidly it comes forward with the slightest protection if covered early enough in the season. Cement and Apple barrels can often be had for next to nothing, or at the most the price of fire wood, and these are very suitable for the purpose ; sheds with glass roofs are preferable, for the roots can be packed closely together. By carrying out any such plan it will be found that the ground devoted to this crop is doubly remunerative. The best returns are obtained by those who make provision for supplying it in a forced state only, and these growers have generally exhausted their stock before the time pointed out. Although the majority to be seen in our markets early in the year has a blanched appearance, there is no reason why it should be produced in this condition ; the tide is changing, and ere long preference will be given to that produce which more closely resembles Rhubarb in a natural state—in fact, such produce will realise a better price now. One advantage is gained early in the season by growing it in the dark—namely, it attains the required length quicker than it is capable of doing when grown in the light.

Those who force Rhubarb to precede the outdoor crop should grow it as naturally as possible. They will discover that it will bring nearly as good a price, sometimes better than that forced early. Stock may be planted at once for another year's forcing. For this purpose we plant 2 feet apart each way, so that when they are once in active growth the foliage will smother any weeds that make their appearance. Large roots should not be planted, or those with large plump crowns. The last are objectionable for forcing purposes, for the simple reason that they flower, and numerous small crowns are then produced. Pieces with small crowns are the best, if they have the whole season before them in which to develope strong crowns. How is planting done to make this crop pay ? Surely not by digging and planting, as that operation proceeds the same as performed in private gardens. No. The manure is spread upon the land if it requires manuring, but if this has been liberally applied for the preceding crop the Rhubarb has none. From this do not infer that it can be profitably grown on poor land, for such is not the case. Although Rhubarb will grow almost anywhere, it nevertheless pays for planting in well-worked and liberally manured soil. Sometimes it is planted on ground in which Lettuces have formed the early crop, followed by Veitch's Autumn Giant Cauliflower. Sometimes it is planted after late Potatoes, but very rarely, as it is better after Cauliflowers, Brussels Sprouts, or some crop where Lettuces or Potatoes have been taken from the same ground earlier in the season. Such crops take much out of the land, and a light dressing of manure then follows the removal of the last crop.

Rhubarb can be ploughed-in by placing the roots in every third furrow. The better plan is to plough the land whenever the weather is favourable and an opportunity presents itself, and then plant with the aid of a spade the same way as the land has been ploughed. In this case it is necessary for a man and a boy to work together. Those familiar with the planting of Turnips and other similar roots for seed as a field crop will readily understand how the work is carried out. Directly the plants show above ground the land is worked between them once to check small weeds. If this work is done by the aid of a horse the hoe must be used as well between the plants, which prevents the "headlands" being cropped for a time. Generally this work can be done in the case of Rhubarb in time for a crop of Lettuces, Beet, White Turnips to draw when ready, and we have had a valuable crop of Swedes, just the size for shop purposes. When grown for this purpose alone the seed should not be sown too early, or on land that is too rich. However, this matter need not trouble those who live in the vicinity of towns, for large ones sell just as well as small ones, although for a different purpose. It generally happens that the larger they are the better they are likely to pay the grower, provided the quality is good.

SEAKALE.—Another crop that pays is Seakale in a forced state, if this may be regarded as a luxury ; nevertheless it is in demand, and if more was produced more would be required, simply because it would be within the reach of a greater number of buyers, who at the present time are in the position only to look on and pass by. If it were half its present price, would it pay ? Most decidedly it would, for it is not a crop that entails a large amount of labour in production. The cost of planting, manuring, lifting, and cleaning is less than that required in the culture of Potatoes. The preparation of the sets is only work for boys, and can be done during weather when most operations outside are at a standstill. Another advantage is that it can be planted before cropping generally commences, in fact it matters very little when it is planted provided the ground has been well worked and is fertile. I have planted from the end of January to the end of March with no striking difference in results. Towards the end of February is a good time, but so much depends upon the nature of the soil upon which it is planted. A stock is readily raised by sowing seed towards the close of March or early in April in shallow drills 15 inches apart, the young plants to be thinned to 6 inches apart. Fair crowns can be produced in one season from seed, but the plants must be given more room to develope. A one-year-old plant will frequently make two good sets or root cutting from which large crowns may be expected. The sets should be all one length, 6 inches, and be planted 18 inches from row to row, and about 15 inches apart in the row. If the land has been well worked they can be planted with a dibble, placed in a slightly slanting direction so that the soil is easily pressed to them with the foot. The most promising crowns only should be left, and when they are disbudded the ground may be worked to check weeds until their spreading foliage covers it. These are far preferable to seedlings.

All methods of forcing outside for market purposes have to give place to that of lifting the crowns and forcing them in sheds, under the stage of warm houses, rendered dark by shutters. Early in the season heat is essential, later it is not needed. The roots can be packed thickly together in ashes, leaf soil, sawdust, sand, garden soil, in fact anything. We prefer the second, or old Mushroom bed refuse, in which they root amazingly, and from which we fancy the best heads are produced. This is a matter, however, that might well exercise the attention of some private grower, who has nothing to lose by conducting a few experiments, but in the end gains enormously, by adding to his store of knowledge, and to that of others who cannot carry out such important work. Forcing when the season has advanced is simple, but the early practice is the most profitable, and that can only be had by pulling off the leaves of a portion of the stock in the end of September, or early the following month, digging up the roots, but not by conveying them at once to the quarters in which they are to be forced, as they are apt to be stubborn, like Rhubarb. After they are lifted leave them on the ground fully exposed, and allow them to become thoroughly frozen. This completes the season's work, and they are ready for the forcing house.

MINT.—I intended in this paper to treat of another "crop that pays." Its growth was the result of an advertisement in a daily paper announcing that at a certain restaurant lamb would be served amongst other things on a certain day. I could scarcely believe what I had read, for I had no idea the lambing season had commenced, and to realise that they would be fit for eating on a certain day surprised me not a little. So I concluded that if they had lamb mint sauce would be an indispensable accompaniment. I still have doubts about the lamb, but none about the Mint, for on the first market following the announcement I went early to see if Mint had found its way into the market. Some foreigner had anticipated this enterprising restaurant manager by forwarding three or four tiny bundles of Mint about 8 inches in length, beautifully blanched for 6 inches of its length, with a few pale sickly yellow-green leaves on the top. But there it was, and all who have any doubts about it will find Mint in our markets before the month of January has far advanced. But more on the Mint topic some other time.—MARKETER.

PLANTING ASPARAGUS.

MARCH is a good time for planting this vegetable. In preparing new beds see that the ground is well trenched to the depth of 4 feet where

the soil will admit of that depth. In trenching well mix with the soil from top to bottom a good quantity of the best old manure. Should the soil be of a light sandy nature it will be greatly improved for the Asparagus by adding a dressing of ground bones; if of a clayey texture, lime rubbish and road scrapings may be liberally added. After the ground has been prepared as advised the beds may be formed. These should be 5½ feet in width, with alleys of 3 feet between them. In such beds the plants can be placed 1 foot apart and 9 inches in the rows. The best for planting are those one year old from seed, which should be very carefully taken up with a fork, not a spade, exercising great care so as not to injure the roots in any way. They should be covered as soon as lifted with a mat, as the roots of the Asparagus soon feel the effects of the air. The fibres are very brittle, and great care should be taken not to break them, as they do not shoot out very quickly after once being injured. Having the plants ready, stretch a line lengthways on the bed 9 inches from the edge, and proceed with a spade to cut out a trench 6 inches deep; then set a row of plants along the trench 9 inches apart, keeping the crowns 2 inches below the surface, placing some earth over them just to fix them in their place till the whole row is planted. After this is done rake back the earth into the trench evenly, and proceed to mark out the next trench in the same manner at 1 foot from the first row, and so on till four rows are planted. The bed should be lightly raked lengthways, taking off all big clods and stones, leaving the surface even and neat; then line out the edges in an exact manner, leaving an alley as above stated. Do not stand on the bed more than is necessary, as the soil must be kept as light as possible. If such a practice is carried out good Asparagus will be fit to cut in three years. Keep the bed at all times free from weeds, and abstain from sowing Lettuces, &c., on them.—AMATEUR.

RICHARDIAS.

MAY I venture a plea for the planting-out system of growing the Richardia? Like Mr. Record I have tried both ways, but unlike him I prefer the planting-out system. He says, "Some advise, and probably succeed, in growing them well by planting them out after flowering." I feel sure the probability if any rests with the pot culture. I think the majority of growers adhere to the planting-out system, and Mr. Record's experience is an exception. From an economical point of view it possesses a great advantage over the other systems, for after they are planted out they can be left to their own resources till the autumn; but we prefer to treat them well all the year through. Mr. Record finds they flower earlier, more freely, and produce better foliage; I am in a position to dispute all three points, for our plants began to flower in the middle of November. It is not possible for plants to flower more freely, and their foliage is all that can be desired, large, stout, and a beautiful dark colour. I heartily agree that there are few plants to surpass these for house decoration. We use them in quantity, both in large pots and small ones. I will give our culture for the past year.

Owing to pressure of work they were not planted out till the third week in June, but we prefer having them out in May. They were planted on rich ground that had received a good dressing of decayed manure previously. The plants were placed in rows, about 2 feet apart each way. The ground was trodden firmly round them, leaving a shallow basin round each one. They received a good watering when planted, and afterwards about every fortnight. Towards autumn, when growing vigorously, they were watered with the drainings from the manure heap. They were lifted on the 22nd of September, having been copiously watered the day before, and were crowded with healthy roots. Each plant was placed in as small a pot as possible, for we grow them specially for furnishing purposes. The smallest were placed in 6-inch pots, the others ranging up to No. 8's. For compost we used loam and Mushroom bed refuse in equal parts, with a good dressing of sheep manure rubbed through a fine sieve. The soil was rammed as firmly as possible. They were placed outside again, under a north wall, and syringed twice daily to keep them from flagging; not a single plant drooped. They were left here till the 29th of September, when we were obliged to house them for fear of frost. They were placed in a house with a night temperature of 45°, with a rise of 5° to 10° during the day. They were next removed to an early Peach house to retard them, for they were not wanted as early as expected; but we had a fine supply of spathes by November 18th, and they have been yielding quantities of spathes ever since. They will in all probability continue to do so till May, as they have done previously, and we have every reason to be satisfied both with their quantity and quality. I am surprised Mr. Record has kept his plants so successfully on the "Blue Ribbon" system. I doubt if many growers have done the same. The plants under notice have been heavily fed with Clay's Fertilizer, Wood's Universal Manure, liquid sheep manure, soot water, and drainings from the manure heap. They have a good watering every day, and the soil is bristling with roots on the surface. This will show that Richardias can be grown on the planting-out system as well as that advocated by your correspondent.—JAMES B. RIDING.

FILMY FERNS.

THE presentation to the Royal Gardens, Kew, by Mr. Stuart Forster of the whole collection of Filmy Ferns assembled together by his father, recalls to my mind such happy hours occasionally spent at 29, Upper Grosvenor Street, in the agreeable company of Mr. J. Cooper Forster, who honoured me with his friendship, and in that of his pet plants, the culture of which formed his principal recreation, that I feel bound to refer to my now almost old note books and devote a few retrospective lines to these circumstances with which so much happiness remains connected that they cannot possibly be forgotten. To begin with, it is necessary to remind the reader that the love of Filmy Ferns was such with the late Mr. J. Cooper Forster that anyone sharing to any degree his kindly feelings towards that most interesting, though much neglected class of plants, always received the most cordial welcome at his hands. We have heard how his kindheartedness endeared him to all those connected with the surgical profession, of which he was one of the greatest ornaments. Tales without number are told every day showing how he could win the sympathy of the equally numberless patients under his treatment during his long stay at Guy's Hospital. The love of his students towards him is proverbial; his benevolent inclination was shown in many ways, and I may safely say that all charities organised with the object of alleviating the distress of either individuals or bodies met with a ready acceptance, which was in the majority of cases followed by a substantial acknowledgment. In fact, his kindly nature was such that the sufferings of a fellow creature, to whatever station in life he might belong, were sure to draw from him a feeling of sympathy and an attempt at relief. Cases without number are reported where his surgical skill was brought into requisition, and successful operations were by him performed, all free of charge, to many sufferers who had been abandoned by their own medical advisers. And in that respect the gardening confraternity held a prominent place, for many are there now in nurseries and gardens who can testify to his kind and generous treatment which saved their life after they had been completely given over. And this opportunity gives me the greatest satisfaction of paying a just tribute of admiration and gratitude towards the memory of such a learned and eminent member of society. His spare time he would devote to angling, a pastime for which he had a great predilection, and to the cultivation of his Ferns, for which his devotion was such that, from the time he began collecting them and until his death, he attended personally to their wants, and that with results in all respects complete, as must be admitted by all who have had the good fortune of seeing them at Upper Grosvenor Street, where their owner was particularly fond of imparting his own and dearly bought knowledge to his less experienced visitors.

His commencement, like that of all other beginners, were marked by sad mishaps, but being gifted with a very keen power of observation, and being particularly tenacious in the attainment of any object he had in view, Mr. J. Cooper Forster introduced in the culture of Filmy Ferns notions entirely new, diametrically opposed to those then in practice, and which at the time were very much ridiculed, although their general adoption in our days prove the soundnses of these ideas, the principal one of which was the cultivation of Filmy Ferns under cool treatment. At the outset, in common with all other growers, and having only for examples cultivators who subjected their plants to stove temperature, he had a small heating apparatus of hot-water pipes supplied from the kitchen boiler and provided with a sort of evaporating tank or cistern introduced into the fernery in which West Indian species, it is true, such as Trichomanes anceps, T. auriculatum, T. Banerofti, T. crispum, the splendid T. alatum; the extremely curious T. floribundum, whose fronds have their pinnæ beautifully fringed with hair-like receptacles; the erect growing and handsome T. Kaulfussi, whose narrow, rather hairy dull green fronds are borne on broadly winged hairy stalks; the superb T. maximum and others luxuriated; but on the other hand the more numerous series, that composed of the species native from New Zealand, Chili, and other temperate regions, in spite of all care and constant attention, were gradually dwindling away. It is then that Mr. J. Cooper Forster resolved to do away entirely with artificial heat, and to depend only on the influence of a cool, moist, and close atmosphere. The structure devoted to the Ferns being small, it was with the utmost difficulty that it could be heated to a given degree only, so the hot-water pipes were at last dispensed with altogether. From that time, if some of the West Indian kinds languished a little all the others began to grow apace; the vigour of the New Zealand and Chilian species under that new treatment was the astonishment of all interested in their cultivation; and the masses of Trichomanes radicans and its varieties, also those of Hymenophyllum nitens, demissum, flexuosum, and others from which he frequently detached handfuls of rhizomes to start some new beginner, showed that they, at least, thoroughly appreciated the change and enjoyed cool treatment. The delicately transparent and comb-like fronds of the Chilian Hymenophyllum pectinatum, and those of the superb Brazilian H. Forsterianum, which formerly were very sparsely produced and always had a stunted appearance, were now produced in great abundance; they were besides attaining large dimensions, showing a robust constitution, far surpassing all that had been expected from these species when they were first imported from their native habitats. The same remarks apply also to the charming West Indian H. asplenioides, which in its wild state is found hanging in masses from mossy rocks or trunks of trees; to the H. caudieulatum, a Chilian species of great beauty, with erect and curving, or pendent thrice-divided fronds which frequently attain 12 to 15 inches in length; to the small, dwarf-growing H. Chiloense, from Southern Chili; to the extremely curious and charming H. cruentum, with broad undivided seaweed-like curving and beautifully veined fronds that, when old, are of a brownish rose colour, found in no other Filmy Fern; to the beautifully crisped and transparent H. dichotomum, which, like the preceding species, is also a native from Chili; and to the really charming West Indian H. valvatum, with ovate, attenuated, nearly smooth, dark green

fronds, everywhere beautifully undulated, are thrice divided, and attain from 6 to 10 inches in length.

All the New Zealand and Tasmanian species of Hymenophyllum, either glabrous or hairy, were there in their element, and perfect masses, which from little plants had there grown to huge dimensions, were to be admired of the pretty and comparatively dwarf H. crispatum, which in its native habitats clothes the trunks of Tree Ferns; of H. demissum, a handsome species whose dark glossy fronds attain 18 inches in length, and of its variety nitens, smaller in all its proportions and with more finely cut fronds of a lighter green; of H. dilatatum, one of the largest and most beautiful species of the genus, and which in New Zealand is found growing in moss and decaying vegetable matter, where its broad pale green fronds, much admired for their gracefully drooping segments, attain from 15 to 20 inches in length; of H. flexuosum and H. pulcherrimum, the latter of which, grown there in hanging baskets, formed perfect balls of hanging seaweed-like finely cut fronds; also of H. scabrum, H. æruginosum, and others too numerous to be detailed here. While among the Trichomanes, besides the European species popularly known as the Killarney Fern, Trichomanes radicans, which grows with thick rhizomes creeping on rocks in the south-west of Ireland and Madeira, we find that the cool treatment most benefited the South American T. angustatum, a very delicate-looking and beautiful creeping species with very narrow pinnules, and fronds 4 to 5 inches long borne on hair-like stalks; the T. exsectum, a species from Southern Chili, where it is found hanging from the roofs of dark caverns; its extremely delicate and membranaceous fronds, which are highly divided into narrow segments of a cheerful bright colour, reaching from 12 to 14 inches in length; the beautiful Todea-like T. meifolium from the mountains of Java; T. pyxidiferum, T. venosum, &c.

All the above-named species and many more were grown at Upper Grosvenor Street on the leads at the back of the dwelling house, and in the midst of London soot, fog, and of an atmosphere constantly impregnated with gas, where, one structure having become overcrowded by their exemplary growth, another one was erected, in which, however, no means of heating was introduced. There the Ferns luxuriated, and the Trichomanes reniforme, a New Zealand species, conspicuous by its large kidney-shaped fronds, which are quite as transparent as those of the most finely divided kinds, formed a glorious specimen about 2 feet in diameter, which, with its foliage produced in such abundance that each frond overlapped its immediate neighbour, was in itself a sight worth a special visit to this remarkable place, in which the constant amount of moisture necessary to the welfare of the Ferns was the greatest difficulty to contend with. This, however, was to a great extent overcome by the liberal use of sphagnum, which was placed between the pots and crammed under the stages and other places out of sight. By that means a comparatively moist atmosphere was constantly kept, but the temperature in winter frequently falling to 38°, and occasionally to 35°, caused the loss of a few of the West Indian species. For instance, the superb Trichomanes maximum, the stately T. anceps, the dwarf-growing T. spicatum, T. Zollingerianum, and a few others never supported the cool treatment, and their culture had to be abandoned. Mr. J. Cooper Forster being most earnest in the object he had in view made numerous and costly experiments, keeping careful records of their results, and when perfectly satisfied as to the hardihood of certain species, would then have it known among all lovers of these beautiful plants, which served equally to the decoration of the windows of his dining-room and staircase, where they were the admiration of every beholder. One of his most ardent wishes was to see Filmy Ferns grown in a more congenial position and temperature than they had hitherto been in Kew Gardens, and he exerted himself in their behalf to such an extent, that some five or six years ago a new place was built for them in the temperate Fern house, No. 3, where formerly they were only partitioned off near the western door, a case containing Todeas and Trichomanes radicans. In that cool house most of the Ferns, which for years had been simply kept alive under separate glass cases in the tropical Fern house, No. 2, have now been growing with a vigour which denotes the benefit which they have undoubtedly derived from the change. This cool treatment, besides being simpler in itself, possesses also the immense advantage of keeping the Ferns perfectly free from insects, whereas when kept in heat they are frequently attacked by thrips and other pests, which, by their depredations, completely disfigure and weaken them in a corresponding degree.

The comparative paucity of Todeas in this grand collection is due to Mr. J. Cooper Forster's antipathy to plants of acknowledged easy culture, as I have frequently heard him remark that "these grow with everybody, they are to other Filmies what the Indiarubber and the Aspidistra are to other decorative plants, and there is nothing to study or to learn from the behaviour of such plants." He preferred the species of cultivation reputed difficult, for the successful raising of which he had no rival. Such was the man who on March the 2nd, 1886, was suddenly taken from the field of his labours in science and horticulture, and whose loss is deeply regretted by all who were acquainted with him.

The Filmies were then removed to Binfield House, Bracknell, near Ascot, where his son, Mr. Stuart Forster, the present generous donor, had a house built specially for their reception, and where, besides the purer country air, they also enjoyed a more spacious accommodation, and altogether more comfort. The house, which is a lean-to, is sunk about 2 feet below the level of the exterior ground, and built in such a way as to have a constant supply of moisture, and, as by its judicious exposition the Ferns require but very little shading, they, of course, give but very little trouble to their owner, yet since they have been there they have made such marked progress as Mr. J. Cooper Forster himself could never have anticipated. With the exception of the Trichomanes reniforme above referred to, all the Filmies at Binfield are planted out in an artificial rockwork built of porous sandstone, and in such position not only have the Ferns benefited by the change, but their improvement in some cases is very noticeable, and it is to be hoped that their safe transfer will not in any way interfere with their welfare, and that their installation in the houses of Kew Gardens, where no doubt some suitable accommodation will be provided for them so as to keep the collection intact, as well as the deserving care which they will receive there, will help to render Filmy Ferns more popular with the generality of Fern growers, who will not fail to consider the presentation to the national establishment a most handsome and very valuable gift.—THEO.



CHRYSANTHEMUM PRINCESS OF TECK.

MR. PETTIGREW has thrown a bombshell into the ranks of Chrysanthemum growers. This is what I thought on reading the article on the above subject. What I did was to go straight to my cold pits (which, by the way, I had not seen the inside of for a week owing to the severe weather), and where I had about one hundred plants of Princess Teck stowed away for protection, to be planted out when favourable weather occurs. These plants I had intended to astonish the Chrysanthemum world with at the January Show of the National Society this year, having cut them down a month later than usual for that purpose; but my hopes were nipped in the bud, as were also my Princess Tecks, by the severe frosts in October, owing to the young shoots not being matured enough. They were taken into the house and tried, but I found the flowers that would open on them would not pay for the room they occupied. They were cut down and placed in the cold pit as above, but on reading Mr. Pettigrew's article my hopes re-awakened, but I am sorry to have to record there is at present not much sign of many shoots for cuttings, not to mention flowers. I should like Mr. Pettigrew to give us a more definite description of the plants he has mentioned, especially as they are in a trading establishment where flowers and plants are grown for profit. Had they been in a private establishment I should not have asked the question, as I should have concluded the smallest quantity of flowers in January and February would be acceptable, but in a nursery at that time of year the space is important. I would like Mr. Pettigrew or Mr. Crossling to tell us how many flowers there were on each plant, and what size were the largest of the flowers. The article as it stands would almost start one dreaming of two crops of flowers off the same plant in one season, a feat which I should think of all the Chrysanthemums the Princess Teck is the least likely to perform. I had myself this year several plants, such as Curiosity and Comte de Germiny, which threw up flower buds from the root, but the few small flowers they would have produced would not have paid for the trouble and room; and I also noticed this year more than any other the Princess Tecks that flowered with me in December threw out side shoots and small buds, but they also would not have paid for any further trouble. Is Mr. Pettigrew quite sure he has not made a mistake in the variety? Sœur Melanie would be more likely in my opinion to throw up suckers. In any case, I should say if the plants and flowers are in any way respectable it is a remarkable freak of Nature, and I as a grower of Chrysanthemums in a small way for profit, would be much obliged if either of the gentlemen would tell us candidly if these plants have given enough flowers to pay for the time and room. If they have not they can only be regarded as curiosities in a small way.—W. BROWN, *Florist, Richmond, Surrey.*

SINGLE CHRYSANTHEMUMS.

SINGLE Chrysanthemums are becoming popular, especially with those who are not bound by any of the rules, strictly confining their tastes to the florists' flowers. They are the easiest of cultivation of any Chrysanthemum that I am acquainted with, are comparatively dwarf in habit, and flower profusely. They can be grown in smaller pots and are much more useful for cutting and arranging in centre pieces for the dinner table or epergnes than the others, which are much too heavy. Some of the sorts, notably Mrs. Langtry, possess a most agreeable perfume when in flower, one or two plants in a house being sufficient to diffuse an agreeable odour, which is noticed the moment the house is entered. As yet they have not been seen much at exhibitions, for the reason that encouragement has not been given to them in the shape of prizes except in a few instances.

Chrysanthemum exhibitors do not, as a rule, grow the single varieties in the best way. Growing the plants in bush form and allowing plenty of flowers to develope is the best method. Cuttings should be inserted from the middle of January to the same time in February singly in small pots, or two or three cuttings in pots 3 inches in diameter, using sandy soil. Place the cuttings under handlights in a cool house, shading from bright sun. Sprinkle them occasionally to prevent

the leaves flagging ; when roots are formed, which will be in about three weeks' time, gradually give more air, and pinch out the point of the leading shoot. Side branches will then form, and if small plants are required one topping of the shoot will be enough, while to have larger plants the side shoots when 4 inches long should be pinched also. Where the plants were struck singly in 2½-inch pots, as soon as roots are freely formed repot these into 4-inch pots, using a compost of two parts fibry loam, one part leaf soil, and one part of spent Mushroom bed manure, adding sharp silver sand freely. Where the plants were struck three in a pot they should be transferred singly into 3-inch pots, placing them where they can be kept rather close for a time until new roots are formed, and the plants will bear exposure without flagging, then remove them where more air can be given to induce a stocky growth. By removing the plants to a cold frame as soon as possible, giving an abundance of air in favourable weather, much may be done to prevent their being drawn up weakly. Repot again when the pots are filled with roots. Useful plants may be grown in 8-inch pots, but if an extra large size is needed 9-inch and even 10-inch pots may be employed. For the final potting add to the previously named soil some finely ground bones and a small quantity of soot. Charcoal will be of immense advantage if the soil is heavy, keeping the whole sweet and porous. The soil should be used in a rough condition, and be made quite firm at this last potting, as this prevents gross growth. Short, firm, well ripened shoots produce the best results ; long spikes branching freely in a natural manner give better results than continually pinching the shoots up to the middle of June. For the smallest plants three or four branches are sufficient to retain from the first stopping, but in the larger size about eight are enough to produce large bushes. If three shoots are produced from the first topping a dozen will spring from the second ; select from these the number required and tie them securely to stakes. At the natural break of the plants in August many more shoots will be produced than is required ; these must be disbudded to the requisite number, about twenty-four on the largest, half that number on the smallest, and from these numerous side shoots will grow and bloom. After the central flowers are cut others are produced by the side shoots in succession. If the plants are housed in succession and some are temporarily protected from frost before they are placed in the houses the season will be much prolonged.

Stand the plants out of doors as soon as safe from frost, selecting an open sunny position, yet protected from north and east winds. Place the pots on a thick layer of coal ashes or boards to prevent the ingress of worms, supplying water to the roots carefully. Directly the pots are well filled with roots apply liquid manure about three times a week, increasing the strength and number of times as time goes on, until it may be given every time the plants need water. Syringe in the evenings after hot days. Allow all flower buds to develope, except where a few larger flowers are desired, then the centre bud on each shoot must be saved, removing all others ; but for show purposes in a cut state it is better to cultivate a few plants specially. The bush plants previously noted must not be formally trained by placing a stake to each branch ; or to secure two or three branches to one stake in a loose manner, which is all they really need, as they are generally of upright habit, and in many cases almost self-supporting.

Where exhibition is the primary object of growing single Chrysanthemums a different form must be adopted. The manner in which societies frame their classes for single Chrysanthemum cut blooms will guide the cultivator in the method the plants must be grown. If twelve bunches, three blooms to a bunch, be asked for, as is often the case, the plants should be grown by the "large bloom" method. Blooms skilfully grown and carefully set up for exhibition find many admirers. When twelve bunches, unlimited in size, are required the "bush" method is the best. If the former plan is decided upon the cuttings should be inserted singly in small pots without delay, using the soil of a sandy character. Select the best cuttings. Those stout and not in any way drawn weakly by overcrowding answer the best, because many of the varieties are naturally slender in habit of growth, and to produce the best results they must be grown as strongly as possible. Shift into larger pots as needful. never allowing them to become root-bound. Place the plants into cold frames as soon as possible, giving abundance of air as the plants become hardier and strong. Do not top the plants, but train up the leading shoot until it forms its first natural break, selecting three to six of the most promising growths. Secure these to stakes in the same manner as adopted for the large-flowered varieties. At the next break, should it occur during the first week in August, remove the flower buds then formed, and continue the growth of the shoots until the next break ; then remove all growths, retaining the buds so formed to develope into the show blooms. Pots 8 inches in diameter are quite large enough, and give the same attention to the plants during the season as to the others grown for large bloom. I give a list of the varieties suitable for growing as bush plants, also for exhibition in a cut state. The first twelve named in the list are best suited for exhibition. I place them in this manner to avoid a repetition of names. Lady Churchill, brick red ; Jane, white, having beautifully twisted long drooping florets ; Mrs. Wills, white suffused with pink ; America, blush, large ; Helianthus, bronze yellow ; Queen of Yellows, yellow ; Crushed Strawberry, colour as its name implies ; Patience, amaranth tipped white ; White Perfection, white ; Oriflamme, reddish brown ; Mrs. Duke, pale lilac ; Mrs. Langtry, pale pink ; Lady Brooke, bright yellow, buttercup form ; Meteor, dark ; Oscar Wilde, dull brick red ; Miss Gordon, light pink with long drooping florets ; Miss Lulu Martin, small pink.—E. MOLYNEUX.

A GOOD INSECT DESTROYER.

LAST spring my employer sent me from London three tins of a powder called "Insect Death," a wonderful dust discovered and used by Mr. Rowland Ward, F.Z.A., with a request that I would try it upon some of my plants for the destruction of green fly and thrips. Since that time and up to the present I have repeatedly tried it, and have in every case found it most effectual ; in fact within two hours after its application it has been difficult to find one insect alive. It is sold in tins at 1s. each holding something like a quarter of a pound. The tins have perforated tops with a sliding piece over that, so as to close the holes when not in use. It is essential that the powder should be kept dry, and should always be applied when the foliage of the plants is dry. I have tried it upon Rose trees both outdoors and in the houses, Cinerarias, Pelargoniums, and other softwooded plants, and it has proved invaluable. I also used it upon some Azaleas that were infested with thrips by dusting the leaves underneath as well as the tops, and it destroyed them. I therefore recommend not only gardeners to try it, but more particularly amateurs and Rose growers generally. Whatever its ingredients may be it has a pleasant smell, and therefore in no way disagreeable to use, and is easily and quickly applied. It is a saving, for it is much better to dust a few plants than to have to fumigate a whole house for their destruction. I have reason to think it will destroy mildew on Roses, for I treated half a dozen plants affected with that malady and they became clear of it, but before being quite sure I intend to make other trials. Mealy bug also soon shifts its quarters when it is applied to them, but I am not sure that it kills them without another trial. I had three tins, and have only used half of the dust, so one tin will last a long time. On all softwooded plants when the powder will hang well very little is needed, but for hardwooded plants and those with harder foliage a little more can be used. The powder is easily washed off with the syringe Ought it not to be advertised ? —THOMAS RECORD, *Folkington Manor*..

THE NEWCASTLE SHOW FRUIT.

I MUCH regret to find Tomatoes mentioned in the first prize collection, page 201, which is an error. I beg you will please to correct without delay, as I wish to be as correct as possible in this matter. I may be excused from replying to "One of the Judges" so long as he withholds his name, for I am in the same fix with anonymous writers as the schoolboy was with an egg. When asked to state the gender, answered, "He could not until hatched." So while my friends remain in embryo I shall remain mute. I notice in your correspondence you advocate the insertion of a clause in prize schedules that all "protests be lodged by a given time." If this is intended for me, I beg to remind you that an allusion is not a complaint, and I never intended my remarks on page 82 as such ; but as "Old Hand" seemed somewhat alarmed at my position, and required further proof, I felt it necessary to assure him of my comfort and supply what he asked for, which I hope I have done to his satisfaction.—J. H. GOODACRE.

[The sentence including Tomatoes was printed exactly as it was written by our correspondent, who it seems does take a little notice of anonymous matter, and he is quite in error in supposing the reply on page 207 was intended for himself. It was an answer to a correspondent who was not interested in the above Show. We have communications from Mr. Hunter and another correspondent, for which space cannot be found this week.]

NEWTON'S PATENT GLAZING.

FROM time to time various systems of dry glazing have been brought before the public ; but the best I have seen is the above, which has been advertised in the *Journal of Horticulture* for some time, and, in my opinion, only requires to be better known to be more generally adopted. I shall remark on facts (and they are stubborn things) which have come under my observation. Some eighteen months ago Mr. Newton had instructions to erect a greenhouse, 30 feet by 16 feet, three-quarter span, on his new principle, for W. Tindall Lucas, Esq., at his residence, The Foxholes, Hitchin. Anyone with a knowledge of the locality will admit that it is one of the bleakest and most exposed in the neighbourhood—just such a place as a miller would like to place a windmill. It is not uncommon for pit lights to take flight during high winds. It was a bold venture to attempt such a system of glazing in the situation, and I think Mr. Lucas must have had some misgivings as to the practicability of it, for he had wood rafters fixed at intervals so as to be able to revert to the old system in case of failure ; and another proof of a suspicious nature was that a portion of the roof was glazed on the old lines—viz., bedded in putty on the new patented bars, but the portion glazed dry has weathered the storms without any breakages whatever. Mr. Lucas speaks highly of the system, as also does the head gardener, Mr. Sheppard. The glazing bars are light in appearance, yet strong. The glass is fitted in so true, so that the roof appears windproof and waterproof, all moisture being conveyed away in the guttered part of the bar under the glass, as shown in the illustrated advertisement. Great credit is due to Mr. Newton for honesty of purpose in not placing his invention before the public before giving it a very severe trial. As the iron bars are galvanised no painting is required (at least, that is optional), so that the after cost is reduced to a minimum, and I am told the price is about the same as the old method of wood and

putty glazing. I am of opinion that when the Newton system becomes better known it will gain favour with nurserymen and trade growers, and it should be well adapted for moisture-loving plants, such as Orchids, also for propagating houses. I have always looked upon iron houses as liable to sudden variations of heat and cold, and when tightly glazed on the old plan with putty are subject to a good deal of breakage from expansion and contraction, but this difficulty seems to be overcome in dry glazing.

At Mr. Newton's residence there are two lean-to houses of about equal dimensions heated with hot water from the same boiler. The first, No. 1, is glazed in the old style with putty and paint, the sash-bars being wood; the other, No. 2, is glazed on the Newton system dry. The house, No. 1, has a brick end: the other, No. 2, glass, so that there is a greater surface of glass in No. 2, but the heating surface is greater in No. 1, yet the thermometer in No. 1 only stood 2° higher than in No. 2. It seemed rather remarkable that this house should retain its heat so well. This is a further proof that the heat does not escape as might be imagined between the bars and the glass. Mr. G. Sheppard, gardener at The Foxholes, says he finds no difficulty in keeping up a night temperature of 65°, and that speaks volumes for the system in such an exposed place, but the light in Mr. Newton's houses is very striking as compared with the old system, and the colouring in the foliage of the plants is more decided.—G. R. ALLIS, *Old Warden Park*



HARDY FRUIT GARDEN.

GRAFTING FRUIT TREES.—A long spell of cold weather has retarded the flow of sap in fruit trees generally, and the operation of grafting may yet be carried out with every prospect of success. It is the usual practice to cleanly cut off the stocks where they are to be grafted in January, but this, though advisable, is not absolutely essential, and it may be done just prior to grafting. There is much to be said in favour of grafting, and the younger gardeners especially ought to practise it extensively. For instance, what at present may be a comparatively worthless tree, the variety being of no value, may in the course of three or four years be completely changed in character by simply covering it with grafts of a superior variety. Grafting seedling fruits on a strong stock is the quickest way of testing their merits, and a vigorous or seedling stock of inferior variety will transmit much of its vigour to a naturally weakly scion.

APPLES.—Any strong standards of inferior varieties ought to have all the principal branches, or say those 3 inches or rather more in circumference, freely cut back, cleanly sawn off, each being then grafted. What is known as crown or rind grafting is the best in this case, two grafts being inserted in each small branch and three in the larger ones, and if firmly tied and properly clayed over not many failures will occur. All or nearly all should make good growth the same season, and if these branches are not pruned in any way a good fruiting tree will soon result. Strong young and well-ripened growths about 6 inches long saved at pruning time and kept plunged in the open ground are the best for grafting, these being dormant when used. Superior dessert varieties, such as Cox's Orange Pippin, Blenheim Pippin, Margil, Ribston Pippin, Adam's Pearmain, Braddick's Nonpareil, Court Perdu Plât, Lord Burghley, and Brownlee's Russet ought to be preferred. If culinary varieties are needed, some of the best are Lord Suffield, Stirling Castle, Keswick Codlin, English or Carlisle Codlin, Beauty of Kent, Kentish Fillbasket, Lemon Pippin, Wellington, French Crab, and Hanwell Souring.

PEARS.—Either standards or pyramids may be cut back and regrafted much as advised in the case of Apples, these coming into full bearing even more quickly than Apples. There are thousands of wall trees of Pears in this country not worthy of the space occupied, many of them being merely preserved owing to the complete manner in which they furnish the walls. Horizontally trained trees may have all the side branches sawn back to within 6 inches of the main stem, in each stump being inserted two good grafts of a superior variety. Only one, however, of these should be allowed to grow, and a good leading shoot being laid in from each reserved graft, no shortening back being resorted to, it is not long before the wall is again furnished with bearing wood. If it be preferred several varieties may be grafted on to each tree. Stunted branches or leaders on Pear trees are often an eyesore, these disfiguring what otherwise would have been a handsome tree. If these are lightly shortened back and grafted with a healthy scion, not necessarily of the same variety as the rest of the tree, the chances are a strong lead will again be available and the whole of the wall space soon covered. Either whip grafting or saddle grafting may be practised in this and all other instances when the stock and scion are of about equal girth. Pears worthy of extended culture are Jargonelle, Williams' Bon Chrêtien, Beurré d'Amanlis, Beurré Superfin, Pitmaston Duchess, Marie Louise, Doyenné du Comice, Louise Bonne of Jersey, Easter Beurré, Glou Morceau, Winter Nelis, Josephine de Malines, Beurré d'Aremburg, Ollivier de Serres, Bergamotte Esperen, and Madame Millet. Grafted on the Quince Pears soon come into bearing order, but the best trees are to be had on the common Pear stock.

PLUMS may also be grafted now, the spawn or suckers thrown up from the roots of old trees frequently being preserved till strong enough to form stocks for choice Plums. All the Gages, Jefferson, Kirke's, Victoria, Coe's Golden Drop, and Blue Impératrice, are valuable varieties.

CHERRIES, provided the scions were taken off early and thus prevented from starting into growth, are not difficult to graft. Old trees may be shortened back and re-grafted, or seedling wild Cherry stocks may be headed down and grafted. Good dessert varieties are Knight's Early Black, Elton, May Duke, Black Tartarian, Bigarreau Napoleon, and Morello. Peaches and Nectarines are generally increased by budding, but common Plum stocks may be headed down and grafted with them. In this case a short piece of two-year-old wood must be attached to the young growth to be grafted.

FRUIT FORCING.

PEACHES AND NECTARINES.—*Earliest-forced Trees.*—During the stoning process the temperature must be kept as equable as possible. Too high a night temperature is not favourable to the fruit, and cold draughts in the daytime are even more injurious. Continue the temperature at 60° to 65° at night, and 70° to 75° during the day. Thinning the fruit must be attended to betimes, it not being advisable to leave during the stoning period more than twice the number of fruits that are to be left for a crop. One fruit to a square foot of trellis covered with foliage is ample. Nectarines are often left much closer, which proportionally lessens their size, whereas to secure fine fruits they require the same space as Peaches. See that all the shoots are tied to the wires as they progress, stopping any gross shoots at a length of about 15 inches. If the pinching results in laterals stop them at the first leaf, and if extension is wanted the uppermost lateral may be trained in as a continuation. If the trees are in good order there will be little necessity for stopping the shoots, they being trained in their full length, allowing space for the development of the foliage in order to solidify the wood as made. Shoots retained to attract the sap to the fruit should be stopped to one leaf, they having previously had the first growth stopped at the second or third leaf.

Second Early-forced Trees.—Attend to disbudding, a shoot being taken from the base of the present year's bearing wood or last year's young wood, and one on a level with or beyond the fruit may be stopped at the second or third leaf. Upon extensions leave young shoots at 15 to 18 inches distance, the shoot from the extremity being trained as a continuation of the primary branch. The main shoots must be 12 inches apart. Commence tying early, as when the shoots are allowed to grow considerably they cannot be brought near to the wood they proceed from without danger of their breaking off. Overcrowding must be carefully guarded against; it is fatal to fine high coloured fruits and the formation and perfection of the wood for future crops. Thin the fruits by degrees, leaving those well placed upon the upper side of the trellis in sufficient quantity for a crop or a little more until the final thinning before stoning. In no case is it good practice to tax the trees with superfluous fruit after it is the size of marbles. Temperature 55° to 60° at night, 65° by day, increasing to 70° to 75°.

Houses Started at the Beginning of February.—In these the trees are in full flower, and some have set their fruits. Continue to fertilise the blossoms on late trees when the pollen is ripe, as we have not derived any aid from bees, which, owing to the cold weather, are "napping" longer than usual. When the blossom is all set recourse must be had to syringing in the morning and afternoon, having the foliage and young fruit dry before nightfall. Disbudding may be done gradually, commencing with the strongest shoots, also thinning the fruits after it is seen which takes the lead in swelling, removing the smallest first, but avoid large reductions of shoots or of fruit at one time. Temperature, 55° at night, 5° less on cold mornings; 55° to 60° by day, advancing to 65° or 70° from sun.

Houses Started Early in March.—The flowers are expanding, and we cease syringing directly the anthers show clear of the corolla, but damp the floors and border, admitting air freely in mild weather, fertilising the flowers on fine days. Maintain the night temperature at 45° to 50°, 55° by day artificially, and 65° from sun heat. Admit a little air constantly. Superfluous flowers on the under side or back of the shoots may be removed by drawing the hand down the growth.

Late Houses.—Replace the lights at once, the buds being well advanced in swelling, promising an abundant crop. Nothing conduces so much to a good set as turning on the heat for a short time in the early part of the day, to advance the temperature to 50°, and to permit of ventilation after the flowers expand, as if there be a prevalence of dull cold weather at that time, closing the ventilators for safety produces an atmosphere that converts the pollen into paste. Houses that have fixed roof lights must have the borders rendered thoroughly moist. If there be any trace of aphides fumigate thoroughly before the flowers expand.

MELONS.—Notwithstanding the cold weather early plants have made good growth, and are showing fruits upon the first laterals. To ensure the fruit setting it is necessary to afford a bottom heat of 80° to 85°, and sufficient moisture only in the soil to prevent the foliage flagging. This will arrest the growth, and in combination with a dry atmosphere—a circulation of warm air passing through the house—will favour the production of pollen. Fertilise the flowers every day, and stop the shoots one joint beyond the fruit. When the fruits commence swelling place warm soil against the sides of the ridges or hillocks. Supply water as required, avoiding a sodden condition of the soil, and to

assist the swelling afford liquid manure, maintaining a good moisture by sprinkling every available surface morning and evening, and syringe the plants lightly at closing time in bright weather. If a succession of fruit be required in the same house some of the plants should be deprived of the flowers if they appear on the first laterals, and stopping these at the third joint will cause the sub-laterals to appear and show fruit, which will be rather later and finer owing to the increased vigour of the plants.

Plants in pits and frames with the shoots trained over the surface will require to be treated in a similar manner to Cucumbers, detailed below, lining the beds and adding soil as the plants advance in growth. Train and regulate the shoots, removing every alternate lateral, and apply water only to maintain a steady growth. The soil should be well firmed so as to secure a sturdy short-jointed growth. As soon as the plants are ready they must be planted in beds properly prepared, and seedlings potted. Seed may be sown to raise plants for succession, also for pits or frames as they become cleared of Radishes or early Potatoes, about five weeks being required to secure strong plants.

CUCUMBERS.—*Pit and Frames Heated by Fermenting Materials.*—Beds that have been formed a few weeks will need good linings. Remove as much of the outside of the beds as can well be spared, and if the heat has not greatly declined it will suffice for the present if one half the bed be lined, deferring the other half until the heat is again declining. In any case let it be applied to the width of 2 feet, as thin linings are of little use, and soon require renewal. When the heat is up in the linings see that there is no accumulation of rank steam in the frame, especially when the sun is powerful, preventing it by ventilation. A good night covering will be necessary to maintain a temperature of 65° to 70° at night. Admit a little air at 75°, and permit the temperature to increase to 85° or 90°, closing at 80° to 85°, not, however, causing the temperature afterwards to exceed 90°. Add a little more soil as the roots spread themselves on the surface. Attend to training and pegging down the shoots, being careful not to overcrowd them. Stop the leading shoots a foot from the sides of the frame, and the laterals at one or two joints beyond the fruit. In watering avoid wetting the foliage as much as possible. Sow seed to obtain plants for growing in pits or frames that have been occupied by early Potatoes.

CHERRY HOUSE.—It will soon be seen whether the fertilising was effectual, as the Cherries will be swelling at the base of the decayed flowers, when syringing may be resumed, once a day at present, and twice a day when the weather is clear and warm. Fire heat will only be necessary to prevent the temperature failing below 40° at night, and to maintain 50° as a minimum by day. Ventilate at 50°, closing at the same, regulating the ventilation according to circumstances. If green aphides appear fumigate the house, having the foliage dry, and keep a strict look out for grubs. Stopping will soon require attention. Pinch out the points of the shoots when they have made 4 to 5 inches of growth, removing those shoots that are not required. Train extensions in their full length, also those for filling vacant space. Overcrowding must be carefully guarded against, it being prejudicial both to the present and future crops.

PINES.—Rooting potted suckers will be indicated by the growth of the foliage, but it is well to turn the plants out of the pots, or at least a portion of them, so as to ascertain the condition of the roots and the soil. The young roots which issue from suckers, or plants subjected to similar treatment are very tender and susceptible of injury from the effects of too much bottom heat, hence when the roots reach the sides of the pots 85° is ample, above which there is danger. When the bottom heat is excessive the pots may be raised, placing some loose tan under and around them, so as to allow the superabundant heat to pass away without injuring the roots. The plants must be carefully supplied with water.

Established plants will now make roots rapidly, therefore have soil ready for transferring them to the fruiting pots, as it is important that they be grown on without check by being either dry or rootbound. Sound fibrous loam in good sized lumps is the best material for potting, pressing it firmly round the balls of the plants, watering the plants with tepid water, and plunging them in a bottom heat of 90° to 95° until the roots have possession of the fresh soil, when 85° is more suitable.

Fruiting plants, and those that are at or near the flowering state should have a night temperature of 65° to 70°, and 75° by day, with 80° to 90° from sun heat, closing at 85°, well damping all available surfaces in the house at that time. Afford succession plants a bottom heat of about 85°, ventilating at 80°, and closing at 85°, lightly sprinkling the plants occasionally.

FIGS.—*Earliest Forced Trees in Pots.*—The earliest trees, or those started early in December, will be induced to swell their fruits by a top-dressing of rich material applied to the surface of the soil, and if a layer of turves has been placed around the rim of the pots, as before advised, space is afforded for the top-dressings. Do not give heavy dressings of rich compost all at once, but apply it little and often; apply also liquid manure, 1 oz. of the soluble artificial manures to a gallon of water, but give it in such quantity as to pass through the pots. Driblets do no good. Maintain a genial atmosphere by syringing twice a day when the weather is bright, but avoid keeping the foliage constantly wet, as would be the case by syringing vigorously in dull weather. Damp the paths, walls and bed, keeping the evaporation troughs charged with liquid manure, and to check red spider paint the hot-water pipes with sulphur. Admit a little air at 70°, increasing it with sun heat up to 85°, which ought not to be exceeded, closing at 80°. The night temperature may still range from 60° to 65°, 55° in the morning in very severe weather is safer than the higher temperature, advancing 10° by artificial means in the daytime. Avoid crowding, stopping or tying the shoots as growth advances, as the fruit to have flavour and colour must, when ripening have full exposure to light combined with a circulation of warm dry air.

PLANT HOUSES.

Nepenthes.—Transfer into larger baskets all Nepenthes that are crowded with roots. Do not disturb the old ball further than is necessary to remove the drainage from the base. A good layer of crocks should be placed over the bottom of the basket, and then the space must be filled in with fibry peat and lumps of charcoal. Press light soil of this nature as firmly as possible, and place living sphagnum moss on the surface. Any plants that have grown tall and ceased to produce pitchers may be cut back close to the base, and be allowed to break again into growth before they are potted or placed into larger baskets. When subjected to good management they do not need severe pruning for several years. By a regular and judicious system of pinching back they are constantly making young growths, which produce large pitchers. Cuttings strike freely if inserted in small pots amongst sand and sphagnum moss, and then plunged in the propagating frame, where a brisk heat is maintained. The cuttings should consist of two joints, and require to be kept close, moist, and shaded from the sun after insertion until they are rooted.

Crotons.—Now the plants have commenced growth cuttings will root readily. To root large heads successfully without losing their foliage take them off where the wood is soft; if taken where the wood is hard and ripened, they generally lose their foliage, and are a long time before they root satisfactorily. However large the heads may be, they can be successfully rooted provided the plants from which they are taken are growing and the wood is moderately soft. A temperature of 65°, a frame that can be kept close, and a brisk bottom heat are needed. Plants from which the heads have been taken may be retained if stock is needed; these will produce strong growths, and in a short time yield good heads. Do not take them in too small a state, or instead of large bold foliage at the base they will have small leaves, which destroy their appearance for many purposes. Plants that have filled small pots with roots and are needed for decoration may have an application of artificial manure to the surface of the soil. Place into 5 and 6-inch pots young stock that was rooted in autumn and wintered in 3-inch pots. Larger plants may also be potted. Use for a compost rich fibry loam, one-seventh of decayed manure, one 6-inch potful of soot to each barrowful of soil, and the same quantity of bone meal, with a liberal addition of sand. Grow these plants in a warm atmosphere, close to the glass and fully exposed to light.

Dracæna Goldieana.—Plants that have grown too tall may be shortened and their tops rooted. In taking them off be careful to cut them where the wood is moderately soft. If the wood is firm they are three or four months before they are well rooted, and often lose their lower leaves, which detracts materially from the beauty of the plants. When the base of the wood is soft they root quickly and freely without losing a single leaf. Good heads may be inserted in 5-inch pots with a little sand for the base of the stem to rest upon. Plunge the pots under handlights, and cover the rim of the pot and surface of the soil with the plunging material, then no water will be needed before they are rooted, provided they are dewed with the syringe occasionally and the plunging material kept moist. D. gracilis and D. Lindeni can be successfully rooted in the same way. If increase of stock is needed keep the old plants in brisk heat, and if carefully watered at their roots they will soon break into growth. The side shoots can be taken and rooted in small pots. It is surprising what a number of young plants can be raised by this method in the course of a season.

THE BEE-KEEPER.

PRACTICAL BEE-KEEPING.—No. 31.

THE end comes at last. With a few additional words of advice and warning this series of papers comes to a close. Most points of importance to the bee-keeper have been touched upon, although many of course have been passed by in silence. A bee-keeper who has read each paper and appreciated its meaning, will, I hope, be able at any rate to grasp something more than the elements of practical apiculture. If this is impossible, then my labour has been but lost, and the kindness of the Editor in allowing me so much of his valuable space has been thrown away. If one bee-keeper has learnt something which he did not know before, it is at least a satisfaction, while if the majority of the readers of this Journal are led to reconsider the position they have taken up, owing perhaps to advice given in more advanced papers, and to return to the paths of simplicity, a good work has been performed.

Spring is quickly approaching after two dreary months of winter

Frost and snow and keen east winds have kept the bees at home, and have therefore done good service to the bee-keeper. Unless it is absolutely necessary, or it is wished to do so for mere experiment, bees should not be disturbed in January, February, and March, although towards the end of the latter month an examination may be made of all stocks if the weather is sufficiently fine to allow of manipulation. If it has been decided to gently stimulate the bees in the latter part of this present month, in order to have them sufficiently populous to take advantage of the May honey or to throw early swarms, this may be done, as I have already pointed out, with safety, provided a constant supply of food is given and means are taken to prevent the escape of heat. If the internal heat of the stock is allowed to escape, the progress of the stock is retarded and not quickened, the aim of the bee-keeper thus being frustrated through his own carelessness. In all probability this will be an early spring, and it is possible that we may escape the infliction of late frosts, notwithstanding the old saying, "As many in March, as many in May." It does not at all follow that because of the long—and as I write, still unended—winter, that stocks will be later in swarming than usual. Six weeks of mild warm weather, when bees are able to fly freely, and almost all day long, will make a wondrous change. Now is the time to obtain all the requisite appliance for the coming season. Everything should be obtained at once, and immediately prepared, so as to be ready for use when required. The unexpected generally happens, so we must always be prepared to meet an emergency. It must also be decided whether to work for sections or extracted honey, or for both, and preparations must accordingly be made, while if an increase is desired, steps must be taken to have a supply of queens and hives—the one to head the swarming stocks, the others to hold the coming swarms. Whatever we do let it be done well. An ill-made section rack, which gives way under the weight of sealed sections just as it is being lifted off the stock, and precipitates 20 lbs. of honey with a crash on to the top bars of the stock, is likely to give a vivid impression of the result of bad workmanship, especially if the accident happens at the end of the season, when honey has ceased to come in freely, and thousands of eager bees are on the outlook for unprotected stores.

Throughout the season, from year's end to year's end, let us remember, and act upon, our knowledge, that all uncalled for interference is not only not advisable, but absolutely injurious. In the middle of the honey flow it causes a cessation of work, in the autumn it gives rise to robbing ; later still, and in the early months of spring, it disturbs the necessary quiet and chills the bees, making them restless and more eager to leave the hive than they would have been had they been left to their own resources. When necessary to do so let every stock be carefully examined, because the evil then feared, and which by such examination is or may be asserted, is greater than the loss occasioned by such an examination.

Let every stock be well supplied with food and strong in bees, headed by a good queen in autumn, and success in spring is practically assured. Keep every stock strong and healthy, and by every possible means avoid the infection of "foul brood." If disease appears attempt without delay to eradicate it, and if the attempt fails sacrifice your stocks rather than waste time and money when by the expenditure of the same time, and by having the bees to take advantage of the honey flow, your extra expense and loss might easily to a great extent have been recouped. Keep strict and careful accounts, and enter up each item as soon as possible, and then at the end of every year a balance can be struck ; and if in any year the balance is unfavourable there is something wrong in the management, unless the weather has been more than usually unpropitious.—FELIX.

DIRECT INTRODUCTION OF QUEENS.

I HAVE read with much interest "A Hallamshire Bee-keeper's" article on queen introduction (page 161). There are few writers who give details so instructive to the subject on hand as "Hallamshire Bee-keeper" does, and experience makes his remarks all the more valuable. But like him I am anxious to let it be known who the persons are that have "benefited us with the great discoveries and inventions which add to our everyday comforts," I suppose matters concerning bees are not excepted? This is the point I wish to explain. "Hallamshire Bee-keeper" and "Felix" speak of the different systems of introducing queens under the name of Mr. J. E. Pond, S. Simmins, Alley, and "A Hallamshire Bee-keeper." If there is anything new the last named is the only one entitled to the honour. But I am afraid the novelty will only be found in the clever way he details his experience. Who, then, are entitled to the honours regarding queen introduction? That is easily answered. The pioneers of this Journal are entitled to all that is valuable concerning queen introduction. Mr. T. W. Woodbury, "A Renfrewshire Bee-keeper," "A Stewarton Bee-keeper," as well as myself, all took part in the subject more than a quarter of a century ago, and direct introduction, although sometimes successful, was condemned, and everything mentioned by "A Hallamshire Bee-keeper" either appeared in the pages of the *Cottage Gardener*, or by private letters interchanged by the above named. Most of these letters are still preserved, and a quotation from one of Mr. Woodbury's may be relied upon as the only safe method to attempt the introduction of an alien queen. He says, "The only safe method is to deprive the bees of the power of raising a successor to the one deposed," which was also my experience. I still advise all bee-keepers to adopt the same plan. I have so often found pleasure in reading "Hallamshire Bee-keeper's" sensible remarks, and beginners should follow his instructions. It is, however, singular that the most of his remarks are similar to those of "A Renfrewshire Bee-keeper" (for which see back numbers), as the different systems of queen introduction direct and otherwise. The aptitude of bees to raise queen cells when an alien queen is introduced occurs too often to allow of any remissness whatever on the part of the bee-keeper, and I can endorse all that "Hallamshire Bee-keeper" says on that point. As "Felix" remarked, "It does not matter who was the first to make a valuable discovery, it was enough if the bee-keepers had the advantage." But on the other hand, is it just to allow those to have the honour who did nothing but appropriate the ideas of others? There still is much of that dishonourable practice, which all the more induces me to stand up for the rights of this Journal and its pioneers in bee subjects.

PROGRESSIVE BEES.

A copy of the *British Bee Journal* was sent me lately as containing something interesting for me. Among other things I observed that the subject of appropriating old ideas was causing animosity amongst some. But what was most interesting was the remark that "Young bees were nursed, fed, brushed down, and led out for their first flight by the adult bees." Such actions I have never seen, nor have I observed that any of the old naturalists mention such a thing. In fact, my experience as well as theirs is exactly opposite. My observations proved that with plenty of food young bees in the cells were attentively waited upon, but immediately they began to break the seals of their cells they had to fight their own battle, making the best of their way out of their cells, performing their own toilet as well as being their own nurses. What say the Darwinians? or can Dr. Walker throw light on the subject? We have not experienced such things, but perhaps like man the bee is progressing.—A LANARKSHIRE BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

H. Cannell & Sons, Swanley.—*Supplementary List of New Chrysanthemums, 1888.*

J. Cheal & Sons, Crawley, Sussex.—*Catalogue of Dahlias and Hardy Plants.*

TO CORRESPONDENTS

*** All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Address (*W. K.*).—The address you require is, we think, Mr. W Collins, 6, Martinoe Terrace, Martindale Road. Balham, London, S.W.

The Eucharis Mite (*G. C.*).—The information you desire will be published in an early issue of the Journal.

Beetles in Tomato House (*A. A. B.*).—The examples sent appear to be, as you surmised, one of the click or skip-jack beetles, the larvæ of which, as "wireworms," are so frequently destructive, this particular species being Agriotes or Elater obscurus. It is not the common species to which the name wireworm more specially applies, yet also injurious, as you have found it to be, though its occurrence on this Tomato is somewhat unusual. Trapping the larvæ or grubs is certainly a good plan of thinning their numbers; also the destruction of the mature insect. The mischief done by this group of insects is intensified by the fact that, though small, they live and feed in the larval stage for two, or even three, years. Though the usual time for the beetles to emerge is July or August, a portion of a brood will occasionally be found in spring, their development being hastened by a warm summer and autumn preceding.

Dissolved Bone Manure (*H. H.*).—This is excellent for Roses, fruit trees, and all kinds of kitchen garden crops, also for flower beds and borders that are more or less impoverished. It may be applied now in quantities varying from 2 ozs. to 4 ozs. per square yard, according to the poorness or otherwise of the soil, and the condition of the Roses on trees to which it may be applied, obviously those that may be healthy and strong not requiring half so much as others that may be very much the reverse. It is a very safe manure, and the good it does is exactly in proportion to the judgment that is exercised in its application on the lines indicated. Bones can be dissolved in an earthenware jar without wood ashes by pouring sulphuric acid on them till they boil. This plan is usually adopted when a large quantity is collected, and in disposing of a few at a time as they are had from the kitchen they will not be offensive if covered with wood ashes as often as the bones are collected. You can, however, try the acid, then adopt the method most suitable to your case.

Gumming Flowers (*Idem*).—The petals of Pelargoniums are sealed by placing one drop in the centre of each flower of a strong solution of gum arabic that can be had from a chemist's. If you desire to make a quantity place 8 ozs. of the gum in 5½ pints of soft water, and allow it to stand two or three days to dissolve, then strain through a piece of muslin. The gumming process can be done quickly by having the solution in small tins, such as ladies use in oiling their sewing machines.

Pruning Clematis and Passiflora (*E. W.*).—Your Clematis does not appear to have made much growth, and the soil must either be poor or have been very dry last summer. Shorten the stem about one-fourth or a little more—that is, if there are buds on it, as there should be, and spread a layer of manure 3 inches thick on the soil over the roots, covering the ground 2 feet from the stem in all directions, and give water copiously once a week in hot weather. If the ground is dry and poor now give a good soaking with liquid manure, soot water being excellent. Allow the mulching to remain and decay. The main growths of the Passiflora should be trained a foot apart or thereabouts, the side growths from them, if any, being cut back within an inch of the base, and the soft green ends of the leading shoots may be cut off. Fruits of the common Passion Flower, Passiflora cœrulea, are not eaten, but those of P. edulis are, and esteemed for their sub-acid flavour. This species requires to be grown under glass.

Damp Conservatory (*S., Surrey*).—Imperfect ventilation, a low temperature, and overwatering are the causes of the mildew and damping off among the plants of your conservatory. A temperature of 50° by fire heat, or higher by sun heat, opening the roof sashes early and regularly on fine days, and careful attention to watering, will soon set matters right at this season of the year. On wet or windy days do not open the ventilators, but insure circulation of the air by gentle fire heat. Your proposal to apply liquid manure to young climbers to induce them to bear flowers is wrong. It is probably owing to excessive vigour that they have been flowerless hitherto; as the growth spreads it will become less rampant, and then you will have flowers. It is the want of light and a low temperature which causes the young growth of the Latania to be discoloured, spotted, and withered. Remove it and the Raphis flabelliformis, which is also suffering from lowness of temperature, to a warm house where the temperature ranges from 50° upwards, till the season's growth is fully developed, and then use them again for the decoration of rooms or cool houses.

Shrubs for Slope in Exposed Situation (*Woodlands*).—If you require something that will afford an evergreen covering, few things afford it better than Hypericum calycinum, which grows about a foot high, and has large bright yellow flowers in summer. Berberis Darwini also does fairly well, and Mahonia aquifolium, both evergreen, and with yellow flowers in spring. Vinca major elegantissima is also suitable. Daphne Fioniana is also suitable for banks, and Cotoncaster microphylla. Genista albus durus, G. multiflora luteus, and G. præcox are dwarf, very free-flowering, and good. Double Gorse is particularly desirable, and Veronica Traversi. If you require anything to appear above the dwarfer plants there is nothing to surpass Hollies, both green and variegated. As you reside near Leeds it would be worth while noting the kinds that succeed on Woodhouse Moor. In deciduous shrubs the Golden and Silver variegated Elders are very desirable. Variegated Dogwood (Cornus sibirica variegata), Lonicera tatarica, and var. alba flora, Hypericum hircinum, Lilac in variety, and Ribes vars.

Roman Hyacinths (*Regular Subscriber*).—When the Roman Hyacinths that have flowered have been thoroughly hardened and the weather is genial, say towards the end of the present month, you may plant them outside. In doing so they should be planted in patches so that they can be protected while in flower with handlights or a frame. The Roman Hyacinth flowers when planted outside too early to insure the flowers being any good for cutting without protection. Rain and early frosts are certain to spoil them, in fact this is the case in the majority of seasons. When February proves mild they often flower outside early in March, and generally before the close of the month. For years we have been in the habit of having a valuable supply of their pure white flowers for nearly a month after those grown inside were over. This was accomplished by planting on a sunny border in patches about 18 inches square, so that they could be covered at intervals of a few weeks with handlights after the growth appeared above ground, the last clumps being covered directly the colour of the flower was visible. Requiring a late supply no longer we lifted the whole stock and forced them. When lifting them we were surprised at the size some of the bulbs had attained and the increase in their number that had taken place. The spikes were equal to any we have seen from the first quality imported bulbs. Rather than plant a few weeks hence we should prefer to keep the bulbs well watered until they ripen their foliage, then shake the soil from them, and dry them in the sun. Then plant them in July, where they are intended to flower. This is the course we have adopted successfully.

Peach Buds Falling (*A. B.*).—There are various causes for Peaches and Nectarines casting their bloom buds. The evil sometimes arises from over-development of the buds, as in the case of trees that are subjected year after year to early forcing, to imperfect formation of the buds, due mostly to insufficient supplies of water and aliment, too much wood, or crowding, overcropping, and attacks of red spider. The buds often fall from a deficiency of moisture at the roots during the season of rest, but of all the causes the most fertile is that of undue excitement and its concomitant checks during the resting period. We do not think the buds falling is in your case due to the cold draughts through the house, but incline to the opinion that the trees have not been duly supplied with water and liquid manure during growth, and the foliage not kept free from insects, also that the trees are kept in too changeable an atmosphere, and too dry whilst at rest. Sometimes the buds fall through a careless application or an overdose of an insecticide. The only way to escape buds falling is to attend carefully to the cultural requirements of the trees. We have not lost any buds of consequence for many years by simply lifting trees that exhibited that tendency, lifting being, with otherwise good management, an almost certain preventive, and it is equally important that the trees be exposed to the full influence of the atmosphere by removing the roof lights so soon as the buds are formed and the leaves give indications of falling in the case of trees that do not ripen their fruit before August, but very early forced trees require the lights removed so as to prevent premature development of the buds. The removing of the roof lights insures a season of complete rest instead of the alternating fluctuations and depressions, which are often sudden, attending trees kept under a fixed roof.

Protests at Shows (*G. C.*).—"Exhibitor," to whose letter we replied last week, did not mention your name, nor the name of any person. He stated a case on the general subject of protests from exhibitors who feel themselves entitled to ask for a re-examination of certain classes in which they conceive an error has been made, and we had no hesitation in expressing our opinion on the subject on page 207. To that opinion we adhere. If judges make a mistake they have a right to have an opportunity of rectifying it, and are glad to do this when they perceive that justice demands it. When any error arises through the conditions of the schedule having been departed from, it is for the officials of the show, with or without consulting the judges, to take cognisance of the matter; but even in such cases the protests ought to be placed before them in writing immediately a supposed infringement is observed, and that is as soon as the awards are made. Any exhibitor, whether he is a member of a committee or not, can enter a protest if he desires to do so, but he should take care to have good grounds for his action, and to state them clearly and promptly in writing to the secretary, in order that the matter can be there and then investigated. You say you were not an exhibitor at a particular show to which you assume allusion was made. In that case the duty of protesting, if a protest was called for, obviously rested on someone else. Whatever is unsatisfactory at past shows should undoubtedly be considered in committee, with the view to its avoidanee in the future; but the deliberations should be conducted in a temperate manner, and in a spirit devoid of recrimination in respect to past action. We refer to no person individually in these remarks, but they are of general application. We find that even Mr. Goodacre was not entirely free from the suspicion that the remarks on lodging protests were intended for him. He was not in the mind of "Exhibitor" when writing, nor in ours when answering last week, nor, we repeat, was your name before us.

Wintering Gloxinias and Amaryllises (*J. E.*).—The lowest temperature in which we have wintered the tubers and bulbs is about 45°, occasionally it may have been lower, but more often a few degrees higher; but we do not state that as the "lowest" endurable temperature and possibly Amaryllises if quite dry would endure greater cold. We prefer a temperature of about 50° for Gloxinias when resting. Amaryllis seed may be sown now in brisk heat. Under the best of culture and most suitable structures a few seedlings may flower in two years, that is when planted out in a warm bed in a very light house, but the majority are three and four years before flowering.

Fruiting and Planting Vines (*Idem*).—Strong well-ripened canes in pots under good management bear serviceable crops of fruit. You would perhaps succeed better by planting them out without materially disturbing the roots than by keeping them in pots. Vines planted in a growing state in June, care being taken that they receive no check from any cause, make and mature excellent canes during the season, and may bear a few bunches the following year; but everything depends on the cultural skill to which they are subjected. In respect to planting Vines in spring just after they start growing, your best plan will be to prune them to the requisite length in the autumn and winter them in any cool place, a shed will do, or even a sheltered place outside, sufficient litter being packed round and over the pots to protect them against frost, a little being thrown over the canes also in very severe weather, planting the Vines when they start naturally in the outside border. You can then grow the "other things" in the house during the winter and early spring, maintaining the requisite temperature for them, and when the Vines start the temperature of the house will be suitable for them that is also suitable for many kinds of plants. It is common for gardeners to shake all the soil from the roots when planting Vines in spring, but we are not sure it would be the best for you to do so, and it might be safer to be content with carefully removing some of the soil, partially disentangling the roots, leaving a good ball of soil, not dry, when planting. We have known amateurs to succeed better by adopting the latter plan than by following the orthodox shaking-out system. We do not know of anyone wishing to dispose of the volumes you mention. There is a possibility of procuring them by advertising, and we do not know of any other way of ascertaining if they are at disposal. On re-perusing your letter, which does not make your case and wishes clear, it occurs to us that you may desire to plant Vines this spring in the outside border. If such is the case, retard them as advised, but do not shorten the canes now, as it will be safer to rub off the buds down to where the leading growth should start from, cutting back the naked cane in the summer when growth is free, or in the autumn.

Rhubarb from Seed (*C. W.*).—It is readily raised from seed, but the plants resulting are not always true to name. A gardener who has had much experience in growing Rhubarb in various ways, says:—"Raising a few plants from seed is a better way of obtaining fresh stock or a new plantation than dividing the old roots. If all growers of old Rhubarb would only be advised to act on this they would reap the advantage in after years. Some who have tried seed may have a word to say against the practice if they have sown it in the open ground and never had a plant from it. I have had the same misfortune, and it induced me to discontinue sowing in the open, and I now raise the young plants under glass. Here they can be obtained early with great certainty and with little labour or space. In most gardens three dozen new Rhubarb plants would be ample for a supply, or a good addition to the old stock, and the only space required is that needed to hold thirty-six 3-inch pots. The seed should be sown at one; indeed, I have often found the advantage of sowing much earlier. I sow three or four seeds in each pot, and place them in any house or frame with an intermediate temperature, where they remain until the young plants are through the soil and ready for placing in a frame or other structure, to be hardened off prior to planting out. The soil where they are to be planted is trenched to the depth of 18 or 20 inches. If very poor, old vegetable refuse may be worked in near the bottom, and after the whole space has been trenched a quantity of good manure should be dug into the surface. The seedlings will be found to turn well out of the pots, and they may be planted from 3 feet to 4 feet apart each way. For the first year or two some other crops—such as Spinach, Turnips, or Lettuce—may be grown between the Rhubarb. Preventing the growth of weeds is the only attention needed the first summer. When the leaves die in autumn the crowns are covered to the depth of 2 or 3 inches with manure, and this is allowed to decay, as the young growths push up through it in spring. By the time the roots are sixteen or eighteen months old many of the stems are ready for use, and it is better to remove some of them than allow them to become crowded. The crowns, too, become better ripened in autumn when they are not closely shaded with leaves; and having them thoroughly matured is of considerable importance, especially when the roots are intended to be forced during the winter. As these notes are intended more for those who grow Rhubarb for summer use than winter forcing I will not enter fully into the latter process, but may remark that where a large number of forcing roots are wanted annually spring seedlings would keep up a better supply than dividing old roots. Those who may have any difficulty in obtaining pure seed should select one of their own best plants for seed, and so improve their strain."

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*O. W.*).—1, Tower of Glamis; 2, London Pippin; 3, Claygate Pearmain.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*J. W.*).—The two similar flowers sent are Dendrobium crassinode, the other is Zygopetalum crinitum. (*J. J. S.*).—An extremely dark variety of Dendrobium nobile, of a similar type, but not so fine as the variety named nobilius. (*W. R. S.*).—1, Odontoglossum maculatum; 2, O. triumphans; 3, O. Pescatorei.

COVENT GARDEN MARKET.—March 14th.

Market very dull with prices easier.

FRUIT.

	s.	d.		s.	d.		s.	d.		s.	d.
Apples, ½ sieve	2	6	to	4	6	Oranges, per 100	2	0	to	5	0
Nova Scotia and Canada barrel	10	0		18	0	Pears, dozen	3	0		6	0
Cobs, 100 lbs.	45	0		0	0	Pine Apples, English, per lb.	0	0		0	0
Grapes, per lb.	3	6		5	0	St. Michael Pines, each	3	0		5	0
Lemons, case	10	0		15	0	Strawberries, per oz.	1	0		1	3

VEGETABLES.

	s.	d.		s.	d.		s.	d.		s.	d.
Artichokes, dozen	1	0	to	2	0	Lettuce, dozen	0	9	to	1	3
Asparagus, bundle	8	0		0	0	Mushrooms, punnet	0	6		1	0
Beans, Kidney, per lb.	1	6		0	0	Mustard and Cress, punt.	0	2		0	0
Beet, Red, dozen	1	0		2	0	Onions, bunch	0	3		0	0
Broccoli, bundle	0	0		0	0	Parsley, dozen bunches	2	0		3	0
Brussels Sprouts, ½ sieve	3	6		4	0	Parsnips, dozen	1	0		0	0
Cabbage, dozen	1	6		0	0	Potatoes, per cwt.	4	0		5	0
Capsicums, per 100	1	6		2	0	,, Kidney, per cwt.	4	0		0	0
Carrots, bunch	0	4		0	0	Rhubarb, bundle	0	2		0	0
Cauliflowers, dozen	3	0		4	0	Salsafy, bundle	1	0		1	6
Celery, bundle	1	6		2	0	Scorzoners, bundle	1	6		0	0
Coleworts, doz. bunches	2	0		4	0	Seakale, basket	1	3		1	9
Cucumbers, each	0	6		0	9	Shallots, per lb.	0	3		0	0
Endive, dozen	1	0		2	0	Spinach, bushel	1	6		2	0
Herbs, bunch	0	2		0	0	Tomatoes, per lb.	1	0		1	6
Leeks, bunch	0	3		0	4	Turnips, bunch	0	4		0	6

PLANTS IN POTS.

	s.	d.		s.	d.		s.	d.		s.	d.
Aralia Sieboldi, dozen	6	0	to	12	0	Fuchsia, dozen	0	0	to	0	0
Arum Lilies, dozen	12	0		18	0	Genista, per dozen	6	0		12	0
Arbor vitæ (golden) dozen	6	0		9	0	Hyacinths, dozen	5	0		10	0
,, (common), dozen	0	0		0	0	Hydrangea, dozen	0	0		0	0
Azalea, dozen	24	0		42	0	Lilies Valley, dozen	18	0		24	0
Cineraria, dozen	8	0		12	0	Lilium lancifolium, doz.	0	0		0	0
Cyclamen, dozen	12	0		24	0	Marguerite Daisy, dozen	9	0		12	0
Dielytra, per dozen	12	0		18	0	Myrtles, dozen	6	0		12	0
Dentzia, per dozen	6	0		9	0	Narciss, per dozen	8	0		10	0
Dracæna terminalis, doz.	30	0		60	0	Palms, in var., each	2	6		21	0
,, viridis, dozen	12	0		24	0	Pelargoniums, dozen	12	0		18	0
Erica, various, dozen	9	0		18	0	,, scarlet, doz.	6	0		9	0
Euonymus, in var., dozen	6	0		18	0	Poinsettia, dozen	0	0		0	0
Evergreens, in var., dozen	6	0		24	0	Solanum, dozen	9	0		12	0
Ferns, in variety, dozen	4	0		18	0	Spirea japonica, doz.	12	0		15	0
Ficus elastica, each	1	6		7	0	Tulips, dozen pots	6	0		9	0
Foliage Plants, var., each	2	0		10	0						

CUT FLOWERS.

	s.	d.		s.	d.		s.	d.		s.	d.
Abutilons, 12 bunches	3	0	to	6	0	Lilies, White, 12 bunches	0	0	to	0	0
Anemone (Fulgens), 12 bunches	5	0		8	0	,, Orange, 12 bunches	0	0		0	0
Anemones (French), 12 bunches	3	0		4	0	Lily of the Valley, 12 sprays	0	6		1	0
Arum Lilies, 12 blooms	4	0		6	0	Mignonette, 12 bunches	3	0		6	0
Azalea, 12 sprays	0	6		1	0	Narciss, white (French) 12 bunches	2	0		4	0
Bouvardias, bunch	0	6		1	0	Narciss, various, 12 bchs	1	6		3	0
Camellias, 12 blooms	1	0		4	0	Pelargoniums, 12 trusses	1	0		1	6
Carnations, 12 blooms	1	0		3	0	,, scarlet, 12 trusses	0	6		0	9
Chrysanthemums, 12 bchs.	0	0		0	0	Primroses, 12 bunches	1	0		3	0
,, 12 blooms	0	0		0	0	Primula (single), bunch	0	4		0	6
Cyclamen, 12 blooms	0	6		1	0	,, (double), bunch	0	9		1	6
Daffodils, Double, 12 bchs	5	0		10	0	Roses, Red, 12 blooms	4	0		8	0
,, Single, 12 bchs	6	0		12	0	,, (indoor), dozen	3	0		4	0
Daisies, 12 bunches	2	0		4	0	,, Tea, dozen	1	6		4	0
Epipbyllum, 12 blooms	0	4		0	5	red, dozen (French)	1	6		3	0
Eucharis, dozen	4	0		6	0	,, yellow	4	0		9	0
Gardenias, 12 blooms	5	0		12	0	Snowdrops, 12 bunches	1	0		2	0
Hyacinths, Roman, 12 sprays	0	6		1	0	Spiræa, bunch	0	6		1	0
,, French, 12 bunches	0	9		2	0	Stephanotis, 12 sprays	0	0		0	0
Lapageria, coloured, 12 blooms	1	0		1	6	Tropæolum, 12 bunches	2	0		3	0
Lilium longiflorum, 12 blooms	6	0		9	0	Tuberoses, 12 blooms	2	0		3	0
Margnerites, 12 bunches	2	0		6	0	Tulips, dozen blooms	0	6		1	0
						Violets, 12 bunches	1	0		1	6
						,, (French), bunch	1	6		2	0
						,, (Parme), bunch	3	6		4	6
						White Lilac, per bunch	5	0		6	0



LESSONS OF THE LAMBING SEASON.

Notwithstanding the exceptionally cold weather of last month we have favourable reports of the lambs from all parts of the country with certain exceptions, as there always will be. The ewes are said to be healthy and strong, which of course implies that the lambs are also healthy; but the remarkable feature of the season is the fact of a low per-centage of losses from abortion.

The reason of this is the failure of the Turnip crop upon so many farms last year, and we repeatedly hear it said that after all Turnips cannot be so neeessary for ewes as was supposed ; and we are even told that Turnips may have been the cause of much of the heavy loss in past years. Those of our readers who have followed our teaching during the last few years will remember how persistently we have warned them against folding upon Turnips before the lambing, nor have we been content with a mere warning, but we have shown how we and others have suffered heavy losses from their premature use. Even so late as last year we lost about a score of ewes from the disobedience of one of our shepherds, who was not sufficiently under the master's eye for a thorough check to be kept upon his doings. His dismissal will, we hope, tend to enforce attention to our orders in future. We may here mention in passing how frequently we experience a feeling of envy against those farmers whose land lies well well together, so that they can see all that is neeessary once or twice daily. We have a tenant who farms a thousand acres of land, most of which he sees twice every day, but two of the farms we have in hand are nearly fifty miles apart, and the others are so scattered that we cannot see as much of any of them as we should like. Depend upon it, if farming is to be successful there must be constant and close supervision of every detail of the work done at all seasons of the year.

Returning now to the lambing, we quote from a daily contemporary the following important statement :—"From every quarter we hear that there have been fewer losses of ewes, as well as a smaller proportion of abortions and still-born lambs than usual, and this is universally attributed to the inability of flockmasters to feed their in-lamb ewes on any Turnips this season. Some theorists are, parrot-like, repeating the hackneyed phrase that farmers are learning a serviceable lesson this year by making the discovery that in-lamb ewes should have few roots ; but the experienced and intelligent among them learnt it long since. Owing to the great losses of ewes and lambs in the winter of 1876-7 Mr. Henry Woods of Merton sent out 500 circulars to the leading flockmasters of the kingdom to ascertain by unmistakeable figures how their experience differed. In one case, from the county of Norfolk, he found that in a flock of 590 ewes there had been 130 abortions and 105 deaths of ewes, while in another flock of 344 from the same county not a single abortion or death was experienced. One Warwickshire flock of 340 suffered 98 abortions and 36 deaths, while another of 729 in the same county chronicled only four abortions and seven deaths. The greatest exemption from losses was probably that of a large flock of 1206 in Kent, in which there were no abortions and only five deaths. Mr. Woods, in making known the results, said, "I have taken fifty cases where the feeding and results are most satisfactory, and fifty other cases just the reverse. The fifty good cases comprise 25,281 ewes, and in that number the cases of abortion only amounted to 126, and the deaths from all causes, up to the end of April, to be 222. The fifty unsatisfactory cases comprise 21,682 ewes. Of these twenty-two do not report the actual number of abortions, contenting themselves with acknowledging heavy losses, but the remaining twenty-eight alone give the startling number of 1884. In ten the owners, while admitting great loss of ewes, are absolutely silent as to numbers, yet the remaining forty give a total of 1255 deaths."

Although these facts were thoroughly made public at the time, and farmers have repeatedly gone through worse seasons of scarcity for roots than the present one, in which they have invariably suffered less from deaths amongst the sheep than when Turnips are plentiful, the bulk of them still proceed in the beaten track of pursuing costly culture and allowing their flocks to feed *ad libitum* on Turnips when they are plentiful. Even in the present season we have seen ewes and lambs out on Swedes half covered with snow, the ewes greedily eating the half-frozen roots, the lambs standing about in the mire caused by trampling the snow into the soft soil beneath it. Worse still, if possible, is it to see the pregnant ewes in other folds out upon Turnips with a sea of mud around them, where they cannot lie down, and into which they sink at every step, so that mere movement causes a severe strain upon the entire frame. Under such conditions is matter for wonder that losses of both ewes and lambs are numerous ?

WORK ON THE HOME FARM.

Frost and snow have left us, and we have March wind and sunshine to dry up the land, so that by the time this note is printed we hope to be in the full swing of sowing the spring corn. First of all come spring Tares for the sheep, then Peas and Beans, followed by Barley and Oats. Clovers and Grasses will either be sown with the corn, or, as many wisely prefer, it will be sown when the corn is well above the surface, in order that the growth of such forage plants may be sufficiently retarded to keep it from growing so much as to prove a hindrance to the corn harvest.

Glad indeed are we to find so many farmers coming to us for advice about the use of chemical manures with their spring corn. In every case they have been told not to expect good results unless other points of culture have full attention, for manure alone will not improve a crop if the land be wet or very foul. Where pasture was under snow throughout February, and a week or more of the present month, the manure was not applied. No time should be lost in using it once, for if it is not used while there is a probability of rain the results will be the reverse of satisfactory. As much as possible of the manure is drilled with the corn, so that the moist soil may render it soluble by the time the young plant requires assistance. In plants, just as in animals, we like to promote vigorous growth from the first, and we can only hope to do this by having an ample store of fertility in the soil at the time of sowing. In some recent experiments the plan of withholding nitrogenous manures till the plant is in full growth has been tried with not very satisfactory results, for the simple reason that readily as such manures dissolve they cannot do so without moisture. To withhold them till late in spring involves so much risk of having little or no rain for such a purpose that we decidedly prefer sowing with the drill or before it, so as to ensure the manure being sufficiently blended with the soil to cause it to dissolve. In the excelsior drill we have an implement which sows seed and manure at the same time in a simple and expeditious manner.

AGRICULTURAL BALANCE SHEET.

PLEASE permit me to thank most heartily the author of your agricultural article on page 185 for his very courteous reply to my request *re* the above subject. I had not the slightest idea of in any way doubting his veracity when writing my note. If the wording suggested this it was not intentional. What prompted me to write just then was an observation made to me (when mentioning your correspondent's note to him) by an experienced land agent—viz., that it was easier to write articles on scientific farming than to produce a balance at the bank after paying all the expenses of such farming. The cause of the said agent making this remark was in reference to a note in the *Yorkshire Post* penned by the writer of this, which note I herewith forward for your inspection. You will see that part of the substance of my note in the *Post* was a repetition of some of your able coadjutor's remarks in your columns. Had I personally doubted his veracity I do not think I should have repeated his sayings, which I practically did. As a further proof of my not doing this, I may remark in conclusion that for some time past I have had a wish that circumstances would only have allowed me to send a strong active lad of mine for a year or two as a worker under his tuition. This cannot be, though.—C. J. H.

[The letter referred to, and a very good one it is, is of the nature indicated by "C. J. H."]

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				
1888. March.	Barometer at 32° and Sea Level.	Hygrometer. Dry.	Hygrometer. Wet.	Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature. Max.	Shade Temperature. Min.	Radiation Temperature In sun.	Radiation Temperature On grass	Rain
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 4	29.954	32.4	31.8	S.W.	34.2	43.2	28.0	82.2	23.1	—
Monday..... 5	30.053	33.8	30.4	N.	34.1	42.6	27.2	79.4	20.8	—
Tuesday 6	30.029	39.4	38.3	N.	34.4	49.2	33.6	89.7	24.7	—
Wednesday.. 7	30.104	39.9	38.0	S.W.	34.8	50.1	36.1	84.7	27.2	0.010
Thursday.... 8	29.833	46.3	45.6	S.	36.2	51.2	39.8	57.2	38.2	0.262
Friday 9	29.476	50.8	49.1	S.W.	38.2	52.6	46.1	61.9	45.2	0.035
Saturday 10	29.361	48.5	46.9	W.	39.8	55.4	46.3	92.8	42.8	0.350
	29.830	41.6	40.0		36.0	49.2	36.7	78.3	3[illegible].7	0.657

REMARKS.

4th.—Fair, with a good deal of sun, but cold wind.
5th.—Cloudy early and at times in the afternoon, otherwise fine.
6th.—Fine, but at times cloudy, especially in the afternoon.
7th.—Beautiful morning, but generally cloudy in the afternoon.
8th.—Stormy from S.W., dull and damp.
9th.—Rain in the small hours; dull day with occasional showers.
10th.—Dull and drizzly till 10 A.M., then finer with a little sun, and bright afternoon.

Sudden change of temperature in the middle of the week, so that the weekly means are very near the average for the season; and with the higher temperature came some very acceptable rain.—G. J. SYMONS.

NEW LAWNS.

SOME lawns are so uneven in surface, so full of weeds, such as Daisies, Plantains, Dandelions, and coarse grasses, that they give much trouble in keeping, and are never satisfactory. More time, labour, and expense are often incurred in patching and mending such lawns than would be necessary to form a new one that with ordinary care would be all that could be desired.

Imperfect drainage is the cause of many unsatisfactory lawns. Drainage acts beneficially through freeing the soil of superfluous water, rendering it not only drier but warmer. All water lodging within 3 feet of the surface is injurious, and should be prevented by a proper system of drainage. Sandy or gravelly subsoils need the drains farther apart than clay subsoils, 8 yards apart being taken as the maximum distance for the former, and 4 yards as a minimum distance for the latter. Where the subsoil is excessively porous the lawn often becomes browned in summer, and to attempt drainage in such cases is unnecessary, indeed it would be better to bring in clayey marl and good soil.

We need not enter on a description of the work the formation of new lawns entails in connection with the erection of a mansion, whether on an old or new site, farther than to point out that it is done sometimes in a most improper manner. All work that necessitates moving the soil or placing it deeper than is necessary in performing the operations of digging or trenching should be done sufficiently early to allow of its settling down before an attempt is made to prepare the surface for sowing seeds or turfing. The soil, whatever it may be, must be well dug, making it all alike—not a few inches deep in some places to burn and brown the grass in hot weather, with deeper, better soil in others to show in drought amid the general brownness as green oäses in a desert. Stir the ground as deeply as the good soil allows, and if the pan below be of a stubborn nature it must be broken up with a pick. If the soil be thin there is greater need to keep it at the surface, and the best plan is to mix the good soil uniformly, as in turning a manure or rubbish heap with enough of the surface soil to form a good tilth. Very light soil may have clay marl mixed with it; a hundred loads per acre can be spread on the surface during frost, and afterwards be dug in evenly, or a similar quantity of chalk can be employed to make it more retentive of moisture. Heavy soils may have ashes, lime rubbish, sand, and road scrapings mixed with them as deeply as the soil is stirred, which will make them more porous, drier, warmer, and more favourable to an early and late growth. If the soil be very stiff throw it up in ridges so that it fall in spring readily into that even surface which is essential for a proper bed for turf or seeds. All digging, trenching, or mixing should be done some little time before turfing or seeding to allow the soil settling. Spare no effort whilst digging or trenching in removing any Couch, Bindweed, Docks, Dandelions, or other weeds.

Where the ground is "in good heart" manure may not be required, but poor soils should have a liberal dressing. Twenty cartloads per acre of good manure will be sufficient for poor soils, and it should only be pointed in or mixed with the top 6 inches of soil. Soil that only needs moderate enrichment will have the want supplied by a dozen loads per acre. Where manure cannot be obtained recourse must be had to artificials, in respect of which I can only reiterate what was stated of them for old lawns—viz., that they are excellent. If the soil be deficient in lime give a supply, as it is essential for the finer descriptions of Grasses, particularly of the Fescue Grasses, Clover, and Lotus, using it in a maximum quantity of 160 bushels per acre, and a minimum of 80 bushels. Apply it in autumn or in spring. If the ground must be manured do so after liming in autumn, or if lime is applied in spring omit the manure, reserving it for dressing in the following autumn or early spring.

From October to March, inclusive, is the best season to lay turf. It may be done at other times with perfect success when the weather is showery; but it is a very uncertain and extravagant method of securing a lawn. The moist showery weather of April and of September is sometimes better than the season indicated for laying turf; therefore, I shall only insist on moist mild weather being chosen. The turf must be taken from soil similar to that on which it is to be laid, and must be of the best possible character and free from weeds. I prefer the turf cut into squares of a foot every way as more convenient than the ordinary plan, leaving it grass side upward after every weed is carefully extracted. Lay the turf as soon as possible after cutting it on a firm and level surface; as even the best may have inequalities they must be rectified in laying. Beating after laying will certainly tend to reduce any irregularities, but the less there is for the beater in that respect the better; indeed, some turf is hammered after laying until the surface is a puddle. Nothing further is needed except a little fine soil (I prefer leaf soil or short manure) disposed evenly with the back of a wooden rake. After the first rain, as soon as the ground is in a state fit to walk upon, roll thoroughly, and the heavier the roller the better.

The best lawns are formed by sowing seeds, proper regard having been paid to preparing and cleaning the ground, and if in good working order firm it by treading, and rake it well, removing all stones and rough material. The tilth for Grass seeds should equal that of an Onion bed, but there is nothing so objectionable as a very close road-like surface. The Grasses will not become established so soon on that as where the surface is readily loosened by a rake. Sow the seed on a calm day, scattering the seeds evenly, and at once rake lightly to cover them from the birds. Roll the ground well and leave it until the Grasses are well developed, when a dressing of soot, 40 bushels to the acre during moist weather, will be most beneficial. Artificials may be given in lieu of soot, but if applied before seeding a second application will not be needed so soon, reserving it for moist weather after the first cutting. Do not be in a great hurry to cut the Grass, but switch it over occasionally with a scythe so as to remove any irregularities, but the more it is rolled when the ground is in a fit state the more the Grasses will spread.

The best time for sowing is perhaps the first moist weather in April and onwards, but the earlier it is done after the middle of April the better are the chances of a good turf being formed. Sometimes the ground is ready for seeding in late summer. In that case by all means sow in September; the seeds will germinate quickly and form quite a carpet before the weather is ordinarily severe. If the precaution be taken to dress the surface before winter with leaf soil or short manure, the twofold object of protection to the Grasses and enriching the soil will be effected.

I have tried compounding mixtures, procuring the Grasses separately, and attained a goodly measure of success, but I find there is little if anything gained thereby, as the various Grasses required for forming lawns differ but little in quantity and scarcely anything in kind for a light, medium, or heavy soil, therefore I am now content to procure a mixture of extra cleaned seeds of the finest dwarf evergreen Grasses for the purpose intended, making two distinctions only—viz., for garden lawns the finest Grasses and Clover, and for bowling greens, croquet grounds, lawn tennis grounds the finest Grass seeds only. If the lawn be an ordinary one occasionally used for tennis, it is easy to add to the mixture a few pounds of Cynosurus cristatus and Festuca durius-

cula; if very light, Suckling Clover and Lotus corniculatus minor, or even Yarrow if very sandy, and for shady places Poa nemoralis sempervirens. The chief thing is to procure clean fresh seeds and sow plenty of them. Parsimony in lawn-making is a certain verification of the adage, "penny wise and pound foolish." Three bushels of seed per acre is a proper quantity, but it is better to err on the side of too much rather than too little seed.—G. ABBEY.

ROYAL HORTICULTURAL SOCIETY.

THE NEW HALL—EXHIBITIONS.

IT is scarcely necessary to say that this note has reference to the building hired by the Royal Horticultural Society for its committee meetings and shows during the ensuing summer. Mr. Smee says though the Hall may not be everything that could be wished, it is near the Army and Navy Stores, which large numbers of people frequent. It is a much finer building than its name of Drill Hall implies. Many, if not the majority of volunteer drill halls, are cold, bare, comfortless-looking, if not repellant structures, with gravelled floors, dirty walls, and corrugated iron roofs. The Hall in question is very different, and no objection can be taken to it in any of those respects. It is a well-finished imposing building, not devoid of architectural ornamentation—in fact as far as regards appearance it is not easy to see how any fault can be found with it.

It is a very large and lofty building, with galleries round, the roof being partly of wood—boarded—and partly of glass, the former perhaps predominating. On a bright day there will be light enough for a flower show, and the hall will probably not be "like a furnace" in summer; but on dull days it is questionable if the light will be all that could be desired; and in winter the building, which is not heated, will be too cold for plants and visitors.

It is not perhaps so large as the conservatory at South Kensington, yet there appears even more room in it for furnishing with exhibits, because a large amount of space is permanently occupied in the conservatory with Palms and other ornamental trees and plants. These have formed a splendid background to whatever may have been arranged on the tables in the wide central promenade. A show, therefore, in the hall cannot be made so attractive as in the conservatory, though with an adequate number of large plants the hall could, no doubt, be made to present a beautiful appearance; and if cultivators, both trade and amateurs, were to unite, and put forth anything like their best efforts, an exhibition would be produced worthy of the most exalted and extensive patronage that could be bestowed upon it.

When a great revival was attempted in 1875 such firms and exhibitors as Messrs. Veitch, Williams, Bull, Turner, A. Paul & Son, W. Paul, Lee, Osborne, Cutbush, Standish, Wills, Laing, Barr, Morse, Wimsett, with many other florists and private gentlemen, joined in producing a show gratuitously, and that will not be soon forgotten by those who witnessed it. Death has been active since then, and time has wrought many changes, yet if the same disposition exist now as then and united action be taken on the same lines a splendid exhibition would be the result, and one that ought to command wide attention. Will horticulturists, amateurs and professionals, join in friendly rivalry, as in the past? If a showing policy is to be carried out it must be carried out on a broad base and liberal lines if the multitude is to be attracted and "funds procured for the maintenance of the Chiswick Garden." Unless greater exertions are made in the future than in the immediate past the so-called "fortnightly shows" will be "lost" in the hall, the public cannot be impressed with the gatherings, and whatever of awakened interest may be created cannot perhaps be sustained.

But something more than shows appears to be required to make shows profitable. When Royalty has vouchsafed its patronage on some past occasions there has been no lack of followers. The shows have been crowded; but in the absence of some great personage they have been sparsely attended, and when prizes have been offered and the money paid there has been no profit, but the reverse, on the undertakings. Mr. Smee seems to base his calculation of the Westminster Shows strengthening the Royal Horticultural Society financially on the fact of £50 being taken as gate money in Finsbury Circus for the exhibition of a "few sickly plants" grown in the City. But did not a Royal Princess distribute the prizes to the humble growers on that occasion? and did not the people flock to see Her Royal Highness and the ceremony so gracefully performed? If that is so, and it was so on at least one occasion, the Finsbury result can be no criterion of the attendance at Westminster unless a member of the Royal Family attends there also. Is there any probability of that honour being conferred? If not the Finsbury example is deprived of its force.

Further, the promoters of the Finsbury Circus Show of sickly plants had a definite and to a very large extent charitable object in view—the encouragement of window gardening amongst the humble occupiers of dreary homes in the slums of the East End of London. This appealed directly to the sympathies of the kindly disposed who were willing and anxious to aid in the good work. The wonder is that under the circumstances not more than £50 was taken on the occasion.

As evidence of the influence of an appeal for charitable purposes affecting the takings at a flower show, perhaps another example may be worth adducing, and one which comes nearer home to the Royal Horticultural Society. This, moreover, affords, according to Mr. Smee's line of argument, stronger evidence in favour of shows at Chiswick being profitable than does the Finsbury case as presaging an inflow of wealth at Westminster. Since the sickly plant show was held in the east a healthy plant show was provided in the west. The district was then, and is now, much more sparsely populated than the other; indeed, it is considered by some persons to be so "far away" that "nobody will go." The Show now in question was held in the Royal Horticultural Society's Garden at Chiswick. Its cost was far greater than the eastern affair, and at the least ten times more money was provided for prizes, yet after all costs had been met, and all prize money paid, nearer £100 than £50 was handed to one of the London hospitals. Admitting the full influence of charity in both cases, and remembering there was the enormous weight of Royalty to draw money in the east and not in the west, Mr. Smee, with his great reasoning power and terse method of expression, could have no great difficulty in showing by induction that exhibitions at Chiswick would prove a source of revenue to the Royal Horticultural Society.

Considering all the circumstances of the case, and taking into account the teachings of past experience, the acting Committee (of which Mr. Smee is one of the most distinguished members, also a member of the Council, and one of the few gentlemen, therefore, on whom rests a double responsibility), will perhaps see the desirability of endeavouring to secure the patronage of persons of high official or popular rank to the shows that are to be held. If the first could be opened by the Lord Mayor, or by some gentleman of eminence and horticultural sympathies, as Mr. J. Chamberlain, the attention of the inhabitants of the great metropolis would be directed to the Society and its work more effectually than in any other manner, and the public would at once find their way to the hall in which their presence is desired. Much more than the £200, as suggested by Mr. Smee, might then be expected to be taken at the Westminster shows during the year. And, it may be observed, that much more will have to be taken before any material sum in the form of "gate money" is disposable for the maintenance of the Chiswick garden. The cost of shows that will be of sufficient importance to insure a large attendance of visitors can scarcely be expected to fall short of £100 during the season, and as the rent of the hall is £100, Mr. Smee's hoped-for takings are disposed of at once. If, however, an even balance, or nearly so, could be arrived at, and at the same time the shows should materially increase the number of Fellows, the hall would then not be a failure, but, on the contrary, the policy adopted would, as all hope, be a gratifying success.

Turning to Chiswick, Mr. Smee believes it will be advisable to have a few meetings in the summer in the gardens there. Many persons will be delighted to find that is a tenet in the belief of so influential a representative of the government of the Society. Chiswick has been woefully neglected for a long time. It was practically abandoned during the years of the general exhibitions at South Kensington, commencing with the Fisheries, and until now. Is it not a matter of common report that the gardens were not even visited by the President and Council during the whole of that time and longer? But a new spirit has arisen since the garden was seen to be in danger of slipping away; and the country has only to be convinced that the Royal Horticultural Society is determined to pursue its true functions largely through the agency of Chiswick to receive the support of hundreds of persons who have held aloof through want of confidence, or in other words because they felt there was nothing to support. The Society must be something more than the shadow of ornamental personages—it must be the substance of real horticultural work to merit the support of the horticultural community. The portals are opened wider now, and what is more, the Council is taking the public into its confidence by making known the official decisions on questions as they arise. That step can scarcely fail to meet with general approval, and eventually to bring an accession of Fellows as soon as it is perceived that real and earnest action is pursued on lines in accordance with their professional instincts. There is no doubt that a great wave of reaction has set in, the sleeping spirit of horticulture is awakened and only financial power is needed to float the Society to prosperity.

How can this be obtained? By City shows. Let us hope so. But cannot Chiswick itself attract visitors to a show of its own—a fruit blossom show in the spring? It would not cost a penny. Londoners want fresh air and spring beauty; railway companies want passengers; Chiswick wants patronage and the substance which follows. Cheap tickets are issued to "see the Chestnuts" at Hampton Court. Cannot arrangements be made for the issue of cheap tickets including admission to Chiswick during the fruit blossom period? When the stately pyramid Pears are draped in their silvery robe, Apple branches wreathed in rosy tinted blossom, and tender leaves are unfolding on the trees Chiswick is truly beautiful. A stroll round the garden then is highly delightful, and one which Londoners would greatly enjoy, if the attractiveness of the garden were made known to them and easy means of access provided. There is no more charming sight near London than Chiswick in the blossoming time; and it is conceivable that a system of shilling return tickets, giving admission to the gardens, could be arranged within a radius embracing an enormous population, and that railway companies and the Society might mutually benefit by such concerted action. The great obstacle in the way of London shows attracting largely is the difficulty in making their existence known when only of a day or two's duration; but a show extending over three weeks forces itself on notice, as the earlier visitors become advertisers, and each succeeding day brings greater numbers when there is something worth seeing and the weather is inviting. This is seldom bad for a week together, though it may be miserable on one or two days that may happen to have been fixed on for an event. The great International Horticultural Exhibition of 1866 would have been a great financial failure if it had been closed at the appointed time—just when its existence was becoming known—but by extending it over a few more days it proved a brilliant success. Would not a three-weeks fruit blossom show at Chiswick, open from 10 A.M. till sunset, bring many visitors and sensibly and favourably affect the Society's finances? Will Mr. Smee and his excellent coadjutors consider the matter? The idea may be fanciful, but the principle involved seems to at least possess the element of safety, for there appears nothing to lose in the venture, while there is the possibility of gaining a little, and it may be something substantial.—A FELLOW OF THE SOCIETY.

A PROVINCIAL VIEW.

The thanks of horticulturists are due to the *Journal of Horticulture* for discussing, on the basis of existing facts, the re-organisation schemes of the Royal Horticultural Society. Glossing over difficulties can do no good whatever. The retention of Chiswick and its development should have been the first consideration of those appointed to draw up a new scheme. If gardeners are to aid the Society in the future it must take a foremost position in all horticultural matters. At present it has a reputation in the provinces for spending money, and incurring expenditure, not on an actual, but an anticipated income. This is just what is being done under the new scheme. A departure would have been welcomed by provincial gardeners, and would have gained the support of many. I believe I could have induced at the least a dozen, and probably more, to join the Society who now await the issue of events.

There appears to be a prevailing impression that shows are the "backbone" of societies. It has been clearly shown that they have helped to weaken the Royal, and are not a source of remuneration to the majority of existing societies even in the provinces. In how many cases does the gate money cover the expenses of the shows? Very few indeed, and but for income from other sources nine societies out of every ten would have been bankrupt long ago. I hope that shows and showing will not be overdone, for I cannot bring my mind to conceive that the advancement of horticulture depends largely upon such institutions. If half the money now spent in shows was devoted to the training of young gardeners a greater and more lasting benefit would be conferred. If some scheme could be inaugurated by which they could be induced to study and make themselves more proficient, good of a substantial nature would be accomplished. If the Royal had its headquarters at Chiswick and there matured a policy for the future, including a scheme bearing upon the above suggestion, it would have gained the help and sympathy of the majority of young as well as head gardeners. Many, I am convinced, that take a deep interest in gardening would readily have responded to an invitation to help. Even now I believe hundreds will be excluded from contributing to the Society's support by not lowering the fee to 5s. These could have been called members, and the degree of Associate and Fellow conferred afterwards according to the standard of proficiency attained. If such honours could be had by working for them and winning, an enormous stimulus would be imparted to gardeners and deeper and wider interest invested in the Society.

I think the amount made out of Chiswick could be increased. But on this point those in the provinces are in a position to say but little, for they do not know exactly what is sold, or on what terms nurserymen, seedsmen, and others are allowed to send things there for trial. Whatever may have been the plan in the past, I think a fee should be charged all who send produce for trial, which would prevent anything of a "trumpery" nature finding a place there. Those that send should pay a marketable price for the seed, such as Potatoes, saved from the stock sent for trial. In such a case the entrance fee might be deducted. Some such plan if properly conducted would allow trials to be carried out without entailing expense on the Society. I do not think persons sending new things for trial could reasonably complain of the plan, for they would not have more to pay than would be required for rent of land, labour and manure to grow the seed at home. Even if it did cost them a trifle more, if they succeeded in obtaining the Society's certificate the value of the articles would be enhanced.—ONE IN THE PROVINCES.

CERTIFICATES AND MEDALS.

Many amateurs and nurserymen express dissatisfaction at the manner in which the Floral Committee perform their duties, and I believe that numerous would-be exhibitors are deterred from sending their plants because there is so much uncertainty respecting the recognition they will receive. An amateur friend sent a new plant in flower to one of the meetings, and the Floral Committee passed it without a word of approval. The same plant was forwarded to a nurseryman who exhibited at the next meeting, and at once obtained a first-class certificate for it. So far from the plant having improved in the period between the two meetings it was not so fresh or satisfactory in several respects. This is only an example of many complaints which reflect upon the judgment of the Committee, and their awards are consequently losing the value and weight they ought to possess. The system adopted is also a peculiar one; for instance, a weedy plant common to many gardens was submitted to the Committee last year, three members voted, one against and two for a certificate, which was, therefore, awarded it, although in another case if ten voted for a certificate and eleven against a certificate it would lose it, though there would be five times as many in favour of the plant shown. There seems to be a strange inconsistency in this method, and the least that should be done would be to state how many vote for an award of this character.

The award of medals, though it may not rest entirely with the Floral Committee, is also carried out in an unsatisfactory manner. Presumably, one of the Society's objects is to encourage amateurs to exhibit as much as possible, yet the way they accomplish this was shown at the last Kensington meeting. Mr. Jacomb then contributed a group of Odontoglossums, comprising numerous fine varieties, and a vote of thanks was considered an adequate recognition, although medals are awarded with surprising liberality to collections of flowers purchased in Covent Garden Market or imported from the continental growers. The Society must indeed mend its ways before amateurs can be expected to join its ranks or aid in supporting its meetings.—A SURREY AMATEUR.

FLOWERS IN SEASON.

ALMOND blossom, Daffodils, Crocuses, Squills, and Chionodoxa in abundance. The silvery Willow "pussies," "palms," or catkins are now lovely, glistening like burnished silver, or like loose-strung pearls in the sunshine of March. Snowdrops are nearly over, but G. plicatus and late flowering vars. of G. nivalis, and the large blossomed G. Elwesi, are yet fresh and fair to see. A friend in England who makes quite a specialty of Snowdrops sent me fourteen distinct varieties, and several of these were new seedlings of his own raising. There are Snowdrops and Snowdrops now-a-days. A form of G. Elwesi, here has borne four flowers on a scape this year, and was a greatly admired curiosity. Some day we may obtain polyanthus varieties of Snowdrops and of Violets, just as we now have Polyanthus Narcissi and Primroses. What a lot of trouble they would save in picking and bunching. When I was a boy, set to pick Gooseberries day after day in a big old country garden, I pricked my knuckles so badly, and the smarting was so severe, that I often wished that Gooseberries (vernacular rustique "Goosegog") grew in bunches like Grapes. But Snowdrops and Violets are so lovely as they are, that it will not matter much if the polyanthus varieties do not arrive in our own time.

A large mass of the Chionodoxa Luciliæ has been much admired. It contains a hundred bulbs, and some Scilla bifolia amongst them. This is their fourth year, and their spikes are strong like Hyacinths, with six to fifteen flowers. C. sardensis is another perfect gem among the spring bulbs, its clear deep blue flowers with white centre being very admirable. Its stems and leaf bases are almost blood-coloured, and this adds a richness of effect to its blossoms which is lacking somewhat in C. Luciliæ. I wish someone would tell us the origin of C. sardensis (? Sardinian, ? Sardis). My own impression is that it is simply a natural hybrid between C. Luciliæ × Scilla bifolia. What lovely posies one may now have of outdoor flowers alone. A brown jug before me is filled with Willow wands covered with silvery "pussie." A branch or two of Almond (in bud when gathered, but it has blossomed out most richly indoors), and a few pieces of green Broom, common Daffodils, and a handful of the fresh green shoots of Broom make quite a pretty vase.

All sorts of Daffodils are now coming into bloom rapidly, and the rain of Sunday last will work miracles in the garden. We have not had twenty-four hours' rain for a twelvemonth or more, and shrubs and trees were half starved, and in many cases suffering by the want of water. Now a few sunny days will work magic

amongst the flowers. Tritoma media is in full flower, even after 14° of frost laid low its spikes only a week or two ago. It is a most persistent and floriferous plant in mild localities near the sea. It is figured in "Bot. Mag.," t. 744, but it is very often misnamed T. pumila in gardens. The true T. (Kniphofia) pumila is distinctly different, and a more beautiful species I have never seen. It is figured in "Bot. Mag.," t. 764, and has more globular blossoms of a more vivid orange red colour. Can any wise man tell us where, whence, or from whom T. pumila (true), as illustrated in the "Botanical Magazine," can be obtained?

Iris stylosa has given us many flowers all through the winter, and I counted thirty fully open flowers in the sunshine of the other morning. Its soft lavender blooms are fragile and soon spoil in the wind and rain, but if you pick the flower buds as soon as they show colour, and place them in a glass of fresh water in a warm room, they open perfectly. Arranged with a few of their own grassy leaves no Orchid can be finer than the blooms of this gem from Algeria. The Greek form has larger, darker, and more boldly marked flowers, but does not seem so floriferous. The gem of this race is I. stylosa alba, with white flowers, but it is as yet as rare as it is beautiful. The little golden Narcissus Cyclamineus is quite hardy, and flowers much more strongly out of doors than in pots. N. Johnstoni, N. bicolor lusitanica, and other of the Portuguese species and varieties so generously introduced by A. W. Tait, Esq., of Oporto, are now lovely in a cold sunny frame. N. moschatus from Val d'Arras is lovely in pots, and the smallest and whitest of all the white Daffodils.

Everywhere there are signs and wonders of the annual resurrection in the garden. Swelling buds, upstarting growths, gleam of bud, and glance of glossy leafage, the grass attains a more tender green, and the Celandine appears here and there with the awaking Daisies of the lawn. Thrush and blackbird have begun the flutey overture, and all the feathered throng are getting ready for their great prima donna, the nightingale, she who loves the stillness of the early summer's night, and whose limelight is the silver moon.—F. W. Burbidge, *Dublin.*

GROWING MELONS IN FRAMES.

It was my intention to pen a few notes on the above subject, but seeing that so experieneed a cultivator as Mr. Ward has given us most useful notes on Melons grown on the hotbed and cold-frame system, page 145, I shall confine myself to those grown in bricked frames.

The frames should first be cleared to the depth of 3 feet 6 inches or 4 feet in front and about 5 feet at the back, and the walls well whitewashed with quicklime and a little salt added. Take wires along the top of the frame, the same as in an ordinary Melon house, eyes being driven into the bearings 1 foot apart, and projecting from the wood about 6 inches; copper or galvanised wire may be used, or even strong string will form a good substitute for this purpose. From four to five wires will be found sufficient, the first one being kept near to the front; this will then give ample space for getting inside the frame at the back for syringing and other purposes.

About the end of March or beginning of April the seed should be sown in 60-sized pots, well drained, filling them with a compost of good loamy soil, a little leaf mould and sand added. Press the fingers on the top and fill the hole with sand, then insert two seeds. This is always best, as very often if only one is sown it ends in disappointment. The pots should then be placed in the warmest place possible, either over hot-water pipes, plunged in leaf mould in evaporating pans or boxes, or if this is not convenient they must be plunged in a hotbed. As soon as the seeds have germinated place the pots on a shelf near to the glass to prevent the young plants drawing and becoming weakly, a shelf in a stove or any house where a good heat is obtainable being suitable for this purpose. When the roots have reached the sides of the pots they should be still further encouraged by a shift into 5 or 6-inch pots, the soil for the purpose being made a little richer and heavier by adding a little Mushroom bed refuse and native guano, also using more loam.

A hotbed may now be made in the frame, it being 2 feet wide from the front wall and 18 inches high, composed of short stable manure, such as is used for Mushroom beds, with a few leaves to help to retain the heat for a greater length of time. Throw this material together in a heap for a day or two, turning it once or twice to allow some of the rank steam to escape. The outside should then be built up with whole turves and filled in with the following compost:—Half a load of good turfy loam, one half barrow-load each of leaf mould and Mushroom bed refuse, a little lime rubble, wood ashes, and charcoal. A sprinkling of soot and Clay's fertiliser, bonemeal, or native guano should also be used in it; the latter can be used with safety, and is also very cheap. The soil should be made firm, and when the plants are well established after the last potting they may be stood on the soil a day or two before planting, which should be done with great care, choosing a warm day, and keep the frame close for a few days. It is always safest to leave a little mound of soil around the stems, which should be kept dry to protect them from canker. They can then be treated as recommended on page 4. By these means fruit may be obtained of as good flavour as when grown in houses. Great care must be given to syringing when grown under these conditions, as except on bright sunny days they will require little more than damping the floors and walls of the pit. An opportunity should be taken on all bright days to well syringe the plants in the morning as soon as the temperature rises, as they are very liable to decay in the growth caused by cold and excessive moisture. If this occurs the decayed parts must at once be well rubbed with a mixture of quicklime and soot until it is dried, or it will rapidly spread and most likely destroy the plants.—W. P. D.

STRELITZIA JUNCEA.

The flowering of this superb Strelitzia is sufficiently rare in this country to demand some notice of the one that was recently in bloom at the Oxford Botanic Garden. Occupying a prominent position on the front stage of the Palm house it was for a time the chief object of admiration in the range, and as there were specimens of S. humilis in flower simultaneously it was the more particularly interesting. There are eight species catalogued by Loudon, all of them natives of the Cape of Good Hope, and the one under notice is figured in vol. vi. of the "Botanical Register," p. 516. The Oxford specimen, however, differs considerably with regard to intensity of colour with this, and may possibly have originated from seed, but on this point Mr. Baxter alone can speak with authority, and he unfortunately has ceased to be associated with the garden. Introduced by Sir Joseph Banks, when George III. was king, the most commonly cultivated species was named in compliment to his queen, of the house of Mecklenburg-Strelitz, and plant lovers are familiar with its uniquely formed and gorgeously coloured blossoms. S. juncea is still more remarkable and interesting. The footstalks being without leaves the plant at all times presents an uncommon appearance, as it grows to a height of about 4 feet, and the almost round, smooth, stout stalks are produced in a fan-like form. The flower-stalks are a little less in length, and are surmounted by sheaths from which emerge its phenomenal flowers. As these expand the bright orange coloured petals acquire a richness that the most brilliantly coloured blooms of S. reginæ do not surpass, and the colouring of the nectary, which is much larger than is the case in the other species, is of an intense indigo-shaded purple, and displays the most splendid and striking contrast conceivable.—S. P. E. S.

SPRING TREATMENT OF CALADIUMS.

All who have a warm pit or house should grow Caladiums. Their season may be said to extend from April to November. At first the foliage is very tender, but so soon as it is well developed the plants present a charming appearance and are not surpassed by any other fine-foliaged plant. When they die down in autumn the tubers are sometimes taken from the pots and shaken from the soil previous to being stored in sand, but more often they are allowed to remain in the pots, which are generally placed on their side under some stage or in the potting shed. If kept quite dry and in a temperature of not less than 55° or 60°, few tubers will be lost, but should damp reach them or the temperature fall too low some are sure to perish.

In some cases the pots containing the tubers are placed in heat at the time growth is commencing in spring, but I do not approve of this plan. The old soil is never favourable for the roots, and they do not make any satisfactory progress. But if the whole of the tubers are shaken from the old soil before being started into growth weakly and decaying ones can be removed, and only the best selected for potting. Caladiums multiply every year. If one large tuber was placed in a pot there might be half a dozen or more by the autumn, but few would care to continue growing the increased quantity every year. Now is the time to select them, and it is better to grow a few of the best than a large number of all sizes. If from one to four good tubers are placed into a 6-inch or 7-inch pot, and grown in these until the foliage is upwards of 1 foot in height, they may then be shifted into a larger size, and this potting is the only one they will require all the season. If good plants are desired in small pots for vase and other decorations, the tubers may be potted in some good soil the first time, and not disturbed again.

Caladiums root very freely; they delight in good drainage and a

rich firm soil. A mixture of three parts fibrous loam, one of half-decayed manure, and a liberal dash of sand suits them admirably. If plunged in a bottom heat of 70° or 75° they will start more rapidly into growth than without this assistance, but they will also grow well and robustly in a temperature of 65° or 70° without bottom heat. Supply water very sparingly until they have rooted into the new soil, and never allow them to suffer afterwards. Caladiums are the best of all plants to resist the attacks of insects. Indeed, they are hardly ever troubled by any pests, and this is greatly in their favour.—M. M.

ARTIFICIAL MANURES FOR PLANTS.

It is a matter of considerable satisfaction to me to find my remarks on the above subject criticised by Mr. W. Coombe, because I consider it a matter concerning which a great amount of useful information may be elicited by the friendly exchange of opinons that have been arrived at by close and constant observation, and if others may be induced to join in this discussion in the frank and practical manner that my critic has done, another good lesson may be added to those already learnt from the Journal. With the first two and a half lines of the article by Mr. Coombe I thoroughly agree; in fact, I am inclined to think that I believe in the views there expressed to a greater extent than does the writer himself, if I am to judge by his subsequent remarks. He begins by saying—"That artificial manures are of the utmost utility to plant growers there is no disputing, but in regard to their various qualities, composition, and action, there is a wide field for discussion." Now, he overlooked the inconsistency of his subsequent remarks, because a little further on he adds, "I am led to believe that many of the artificial manures are overcharged with ammonia-yielding substances;" then, still farther on, he says, "That if the manure applied in the first instance is a properly proportioned combination of the elements needed for the plant's support, no diminution of the plant's vigour will ensue even after a protracted application." If artificial manures contain, as he asserts, "too great a quantity of ammonia-yielding substances," they cannot, by his own showing, be of the utmost utility, simply because they do not possess a properly proportioned combination of the elements needed for the plant's support.

In another place he does not appear to believe that members of the vegetable kingdom are similar to those of the animal kingdom in the matter of sameness of food causing distaste, while towards the end of his article he says, "I sometimes think there is an analogy between plant and animal life, between the way we should treat a plant and the way we should treat ourselves." Yes, then I say give them a change of food, food that is varied in its chemical constituents according to the nature of the plants that are to receive it, the object for which they are intended, and the condition they are in at the time it is applied. If you want to induce a strong and vigorous growth, give them stimulants in which ammonia-yielding substances preponderate. If they show signs of becoming gross and unfruitful give them manures containing a larger per-centage of potash and phosphates, which solidify and build up the woody tissues.

My opinion is that there are various reasons why plants do not thrive so well after one kind of stimulant has been continued for a time as they do when it is first applied. In the first place I do not believe that any one kind of manure, whether artificial or otherwise, contains all the constituents necessary for supplying the right kind of food for plants generally, and although a knowledge of chemistry may enable us to form various manures which are considered likely to supply the most suitable food, yet it is only by practical experience and close observation we can find out whether or not these anticipations are correct, and then how often is it that the results are different from what were expected. Another idea has occurred to me in thinking the matter over, and I wish to be clearly understood that I advance it only as a probable cause. It is this, that as earths, acids, alkalies, salts, &c., are formed by combinations of other substances, such as lime, potash, soda, carbonic acid, ammonia, &c., and these again when brought into contact with other substances in some cases unite and form an altogether different compound, is it then not probable that after several applications of the same food the soil in which the plants are growing must gradually become of a different nature from what it was when the first supply was given? Then is the time to supply something that will hasten the dissolution of the accumulated substances, and convert them into suitable plant food. A good illustration of this may be found in old kitchen gardens that have received heavy dressings of farmyard manure for years, till by their very richness they become distasteful to many crops. Give such land a good dressing of lime, and the results are surprising. But this must be followed up by liberal feeding again, or the rapid decomposition of vegetable matters which the lime has brought about would leave the soil in an exhausted condition.

There are two reasons for mixing Peruvian guano with Clay's fertiliser. Although a very valuable manure when used alone, it clogs the surface of the soil with a pasty sediment, but by mixing it with guano this sediment is very much lessened, and with an occasional rubbing of the surface soil with the hand before watering will keep it in a sweet and healthy condition, and it also has the effect of causing a greater amount of root action. Your correspondent says I am not much inclined to use nitrate of soda for pot plants. Now I consider its use very beneficial in certain cases when used as I described for plants that get into a sickly condition, and those that require something to hasten their growth. Plants that no other kind of manure seemed to improve can often be brought into a healthy condition by this means, and if Mr. Coombe will try the effect of a few doses on plants of Erica hyemalis during the growing season, I think he will be convinced of its utility in their case, as it will cause a quick, vigorous, and healthy growth.—H. Dunkin.



ONCIDIUM SPLENDIDUM.

Until quite recently this handsome Orchid, which Sir Joseph Hooker described as "without doubt the finest Oncidium hitherto discovered," has been very scarce, and consequently valuable. Now, however, after a long search its native home has been refound, and a large importation is offered for sale at Messrs. Protheroe & Morris's Rooms, Cheapside, on Friday this week. It is closely related to O. tigrinum, and several botanists describe it as a variety under that species, but it was allotted specific rank by the botanist, A. Richard, in an MS. description, and adopting this, Reichenbach and others also regard it as a species. The typical O. tigrinum was introduced in 1840, but it was fully thirty years after that before O. splendidum became generally known. It appears from the account given by M. Louis Van Houtte that it is a native of Guatemala, whence plants were first introduced by M. Herment of Caen. From him some were transferred to MM. Thibaut and Keteleer, thence to MM. Linden and Van Houtte, to Mr. B. S. Williams and others—in fact all the plants hitherto in cultivation are supposed to have been obtained from M. Herment's introductions. Attention was prominently called to the plant in

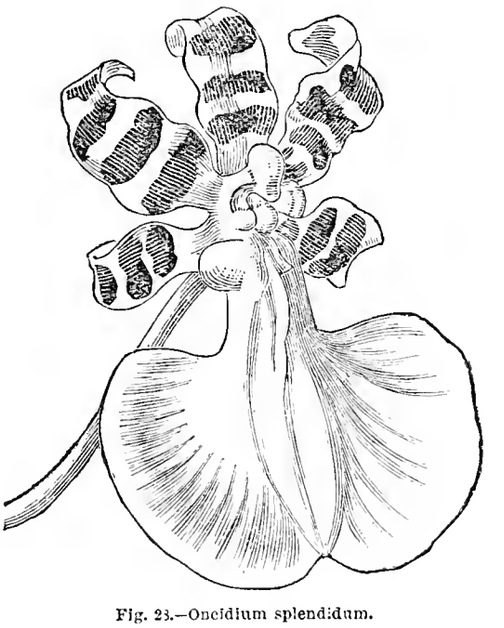


Fig. 23.—Oncidium splendidum.

England in 1870, in which year Lord Londesborough sent a group of Orchids to South Kensington on February the 16th. These Orchids were conveyed from Yorkshire to London under the care of Mr. Denning, and to insure their safety at such an unfavourable time of year a van was specially constructed and heated with hot water. Many beautiful plants were included in this group, but the special attraction was a fine plant of Oncidium splendidum bearing a grand panicle of twenty large flowers, and the first-class certificate awarded for it was never better merited.

A demand arose for this Oncidium, and many efforts were made to import it, but without success, O. microchilum, which closely resembles it in habit, frequently being mistaken for it when not in flower. After a long search, however, Messrs. Sander & Co. have succeeded in finding what is undoubtedly the true plant. O. splendidum differs from O. tigrinum in having larger flowers, broader sepals and petals, and a bolder lip, with a shorter neck. It is also much richer and brighter in colour, the sepals and petals undulated, yellow barred with rich reddish brown; the lip is bright yellow, of a very clear tint.

O. splendidum is not one of the easiest Orchids to grow, but several orchidists have proved that it can be had in very satisfactory condition. It requires the temperature of a Cattleya house, and should be placed on the sunny side, as the growths must be well ripened.

A single flower is represented natural size in fig. 28.

SELECT ORCHIDS FOR AMATEURS.

(*Continued from page 218.*)

CYMBIDIUM.—Evergreen strong-growing plants with long narrow dark green leaves and pseudo-bulbs. Flowers large, white, and handsome in few-flowered erect scapes (eburneum), or various tints of yellowish brown and red in long curving or drooping racemes (Lowianum). India, China, or Australia. Intermediate house. Pots, peat and loam. Chiefly winter or spring flowering.—*eburneum, Lowianum, Mastersi.*

CYPRIPEDIUM.—All these popular Orchids are distinguished by their flowers possessing prominent slipper-like lips and a bold upper (dorsal) sepal. They can be classed in two groups. 1, Evergreen, epiphytal plants with dwarf stems without pseudo-bulbs. Leaves narrow, green, or beautifully marbled. Flowers usually singly or few-flowered scapes, white, yellowish, rose, crimson, variously streaked or spotted with green, crimson, maroon, brown, or purple. Native of the tropics in Asia and America, the group of species referred by some to the genus Selenipedium being confined to America. Warm house. Pots, peat and sphagnum. Flowering at all seasons, some like C. insigne being very useful for winter. 2, Deciduous terrestrial plants with tuberous roots, hardy or half-hardy, natives of temperate regions in America, Asia, and Europe. Pots, loam and leaf soil. Cool house, or damp position at the base of rockeries out of doors. Tropical epiphytes (warm house).—*Argus, barbatum, Boxalli, concolor, Dauthieri, Harrisianum, hirsutissimum, insigne, insigne Maulei, laevigatum* (Philippinense), *Lawrencianum, Lecanum, Lowi, niveum, Spicerianum, Stonei, villosum.* Selenipedium group.—*caricinum* (Pearcei), *caudatum, Roezli, Schlimi, Sedeni,* and several beautiful hybrids of great value, such as calurum, cardinale, grande, and Schroederæ. Temperate terrestrial species (cool house or frame), *guttatum, Irapeanum, japonicum, macranthum, spectabile.* Rockery, *Calceolus, pubescens,* and *spectabile.*

DENDROBIUM.—Numerous beautiful plants are included in this genus, having either long cylindrical stem-like pseudo-bulbs, with short leaves and racemes of flowers from the nodes or apex, or spindle-shaped pseudo-bulbs with larger leaves and long racemes from the apex. Flowers showy, often fragrant, yellow of various shades, white, tipped or blotched with crimson and maroon or rosy crimson, the lip frequently differently coloured from the sepals and petals. Chiefly natives of India, with a few in Australia and Japan. Pots, shallow pans, or baskets, according to the strength of the plants; peat for the former and peat with sphagnum for the latter. Nearly all require a warm house in which to make their growth after their flowers have faded, and a period of rest in a cooler house. A few can be constantly grown in a cool house, the Australian species, bigibbum and superbiens, succeeding in an ordinary plant stove near the glass and exposed to the sun. Winter and spring flowering:—*Ainsworthi, chrysotoxum, heterocarpum* (aureum), *luteolum, nobile, Wardianum.* Spring and summer flowering:—*aggregatum, Bensoniæ, bigibbum, Brymerianum, chrysanthum, crassinode, Deari* (white), *densiflorum, Devonianum, Falconeri, fimbriatum oculatum, formosum giganteum, infundifulum* (cool), *Jamesianum* (cool), *lituiflorum, Pierardi majus, primulinum giganteum, thyrsiflorum, tortile.*

DENDROCHILUM (Platyclinis).—Evergreen plants of elegant dwarf habit, with narrow grass-like leaves and small ovoid pseudo-bulbs. Flowers very small, of a yellowish tint, in long drooping racemes, and delightfully fragrant. Philippine Islands. Pots; peat and sphagnum. Intermediate house.—*filiforme* (flowers June to August): *glumaceum* (flowers February to April).

DISA.—Terrestrial Orchids, with slender leafy stems bearing several large handsome scarlet flowers at the apex. South Africa. Pans; peat and sphagnum; abundance of water during growth and shade. Cool house. Summer.—*grandiflora.*

EPIDENDRUM.—Four hundred very diverse species are included in this genus, but many are of little horticultural value. Pseudo-bulbs ovoid or spindle-shaped, or tall leafy stems terminating in racemes or panicles of durable flowers. The following are useful.—*bicornutum* (Diacrium); flowers white, dotted purple. April and May. Trinidad. Pots; peat. Warm house. *nemorale majus;* flowers pale rose with darker markings; handsome. Mexico. Pots. Intermediate house. *paniculatum;* flowers delicate mauve pink, fragrant. April. Peru. Pots. Cool house. *vitellinum majus;* flowers orange scarlet; very strong and useful. Pots. Summer and autumn.

GALEANDRA.—Deciduous; stems tall, slender, cylindrical and leafy, the young growths terminating in racemes of flowers with large funnel-shaped lips. Tropical America. Pots. Warm house. —*Devoniana;* sepals and petals dark purple, lip white streaked purple.

GOODYERA.—Plants with pretty foliage, similar in habit to, but less delicate than the Anœctochilus. Found in Europe, Asia, and America. Warm or cool house. Pans; peat and sand.—*discolor* (Hæmaria); *macrantha* (cool); *pubescens* (cool).

GRAMMATOPHYLLUM.—Epiphytal Orchids of strong habit. Pots. Warm house.—*Ellisi.* Long quadrangular pseudo-bulbs; broad leaves; flowers in racemes from base, yellow streaked red. July and August. Madagascar.

HOULLETIA.—Epiphytal plants, with ovoid, ribbed, and furrowed pseudo-bulbs; broad leaves, and erect racemes from the base of curiously coloured flowers. Brazil, New Grenada, and Colombia. Pots. Cool house. *odoratissima;* flowers of a strange purplish tint with a fragrance resembling Violets.

IONOPSIS.—An epiphyte of delicate habit, small stem, with narrow leaves, and panicles of pale mauve flowers at different times of the year. A charming little plant. Tropical America. Block; sphagnum. Cool house.—*paniculata.*

(To be continued).

ORCHIDS AT STREATHAM.

THE collection of Orchids possessed by R. H. Measures, Esq., The Woodlands, Streatham, has become widely celebrated for the rare and valuable plants it contains, as well as for the cultural skill displayed in their management. Combining an enthusiastic admiration of his favourites with an accurate knowledge of their characters and requirements, Mr. Measures has not been contented with merely acquiring so many hundreds or thousands of plants, but he has been careful to secure the most beautiful species, varieties, or hybrids in the principal genera, and to grow these in the best possible way. Selection, in fact, has been the rule rather than collection, and the result is that in the value and health of the plants this interesting suburban garden rivals some of the best establishments in England.

THE HOUSES.

The garden is of moderate size, but the most is made of the space at command, the portion near the house being chiefly occupied with the lawn, and the lower division, which is well open to the south and nearly quadrangular in form, is devoted to vegetables and fruit. On three sides—namely, on the north, east, and sonth, this space is bounded by the ranges of glass houses, the majority being span-roofed and running east and west. There are about forty houses altogether, but thirty fine structures are filled with Orchids, and much consideration has been given to these houses with a view to adapting them to the requirements of their occupants. In the first place they are very substantially built, yet light and spacious, the sides being in most cases glazed down to the shelves. In the wider houses there is either a central stage or a space with ornamental supports for large specimens like the Cymbidiums, which are represented by some wonderfully fine plants. There are also side shelves in all cases, and frequently bordered with Pilea muscosa, which thrives everywhere like a weed and has a very pleasing appearance. Upon the shelves a finely sifted shingle is used throughout in preference to any other material, though several kinds have been tried. This is found to retain sufficient moisture, it is much cleaner than most materials, affords little refuge for insect pests, and has a brighter appearance than anything else. Most of the side stages are double—that is, shingle is placed upon cement slabs supported by cross bars of T. iron, and the plants are arranged on open trellises a few inches above this. Ventilation is an important matter, and this is provided by means of a lantern-like ridge in several of the newer structures, so arranged the current of air admitted can be regulated to a nicety and is first directed upwards; beneath the stages there is also liberal provision in this respect, apertures in the walls being covered with perforated zinc, and closed by small shutters or glazed fames hinged on to iron rods in the centre, so that they can be readily opened or closed. Near the doors upon the side they open, the plants are protected from draughts by small glass partitions secured to the shelves and end of the house, a simple method of preventing much injury to delicate plants in severe weather. The supply of water has received careful attention, as the value of rain water is fully recognised; between eighty and ninety zinc tanks have consequently been provided to catch the rainfall on all the glass, and sufficient is stored in this way to provide for at least three rainless months. More attention to this matter would be advantageous in many establishments. The heating throughout is conducted in the same business-like manner, liberal supplies of piping being allowed in preference to smaller quantities to be highly heated, and they are coloured with a reddish composition of a special character, which is said to be preferable to anything else for the same purpose.

The occupants of the houses are very diversified, and comprise representatives of most of the best Orchids in cultivation, but specialties have been made of some genera or even species, and to them alone can these few notes be devoted, but at another time further details will be given respecting the general collection.

ODONTOGLOSSUM CITROSMUM.

Few Orchids are more generally admired than this, and in few establishments is it so well grown as at The Woodlands. About 150 plants are there included, and are grown in baskets arranged upon the side stages in a light house where an intermediate temperature is maintained. One of the special features in their culture is the long season of rest, for during the late autumn and winter they receive no water, in fact they generally have three months' dry treatment. As soon as the spikes are showing, as some are doing now, the supply of water is recommenced, and gradually increased as needed. That this treatment is appreciated is proved by the firm substantial pseudo-bulbs (many 4 inches deep by 3 inches wide), and the abundant flowers produced. The plants are brought on in three successive batches, but as many as 100 racemes have been expanded at one time for a period of two or three months, some of the racemes reaching 3½ feet in length, and carrying twenty to thirty-five flowers each. When suspended from the roof it can be imagined what an effect is produced by these beautiful delicately coloured and fragrant drooping flowers.

COOL HOUSE ORCHIDS.

Several houses are devoted to Odontoglossums, Masdevallias, and other plants requiring cool treatment. A most valuable collection of O. crispum varieties has been formed, comprising both spotted and pure white forms, the flowers of fine shape and excellent substance. O. Pescatorei, O. Andersonianum, O. polyxanthum, and scores of others also included. The Masdevallias are rich in choice varieties of the Lindeni, Harryanum, and Veitchi types, while the extraordinary M. chimæra seems very happy, having been in flower for a great time, and had thirty or forty of its strange flowers.

CYMBIDIUMS.

Rarely are houses in private establishments devoted to Cymbidiums, but it is also seldom that so many large specimens are seen in one place as in that under notice. Cymbidium, the majestic Lowianum, the handsome C. eburneum, the pretty C. elegans, and the strong C. giganteum are all represented by good plants, but there are five huge examples of the first-named in vases or on pedestals. The plants are 10 feet across from tip to tip of opposite leaves, in most vigorous condition, and they flower most profusely. One is now showing thirteen racemes, and they frequently have twenty flowers each. These plants are ornamental and graceful foliage plants, even when not in flower, but they need a spacious house to show themselves to advantage.

CYPRIPEDIUMS.

The Cypripediums hold a prominent place in Mr. Measures' favour, and his endeavour to form a collection of the finest species and all the most valuable hybrids has been singularly successful. Many of these are literally worth their weight in gold, and in the case of small pieces of very scarce forms the pots and peat might almost be included in the balance. But the mere fact of being rare is not sufficient. The plant must possess some distinct character or beauty of its own before it can be admitted to the company of the Cypripedium aristocracy. So we find that nearly every plant possesses some special charm, history or interest, and a long essay might be written upon them alone. The following list of those in flower at the present time will show what a hopeless task it is to attempt their description in one issue of the Journal.

Cypripediums in Flower February and March.—Porphyreum, Spicerianum, vernixium, Measuresianum, Dayanum, Rowallianum, Williamsi, nitens, Dauthieri, callosum, callosum superbum, Argus, Petri, barbatum biflorum, barbatum Warneri, candidulum, concolor, calophyllum, Bullerianum, concinnum, cardinale, pluneurum, venustum, villosum, villosum aureum, marmorophyllum, chloroneurum, leucorrhodum, œnanthum superbum, euryandrum, Harrisianum elegans, Boxalli, Sallieri, Hartwegi, and elegans.

Some of these are large plants and all are in wonderful health, the foliage of the marbled section being extremely beautiful. Particularly noticeable is this in the case of C. concolor and its handsome variety tonkinensis, which have the surface of the leaves covered with a transparent crystalline epidermis, through which the exquisitely delicate markings have a charming appearance. These and many others of the Cypripediums are worth growing for their foliage alone. Besides those named as in flower there are numberless choice plants, amongst which is an admirable specimen of C. Morganiæ, with most of the Veitchian hybrids as well as those from other raisers.

DENDROBIUM NOBILE OR HEATHFIELDIANUM.

Amongst several handsome varieties of D. nobile now flowering at Streatham one of the most remarkable is that named above, of which Mr. Measures has a strong plant with richly coloured flowers. The peculiar character of the variety (*fig.* 29) is in the petals being coloured precisely the same as the lip—namely, a rich velvety purple, the tint extending more than half the length. When the lip is bent back the flower appears to be in six divisions, the three outer (sepals) narrow and the three inner broader, and coloured (petals and lip) like regular flowers of the Lily and allied families. Last August, when visiting Newcastle-on-Tyne, I called at Heathfield House, Gateshead, the residence of Theodore Lange, Esq., and the gardener, Mr. Methven, gave the following information respecting the origin of the plant :—"It is said to have been raised at Heathfield from seed obtained by crossing D. nobile with D. Falconeri, and the first plant flowered about 1881. In 1883 some plants were exchanged with Mr. Cookson of Wylam-on-Tyne, amongst them being one of the hybrid." This flowered at Oakwood in 1885, and was shown at South Kensington on March 10th of that year under the name of D. nobilissimum. Flowers were sent to Prof. Reichenbach, but through some misunderstanding he named it D. nobile Cooksonianum, but he has since substituted the title Heathfieldianum as being more appropriate. Last month both Sir Trevor Lawrence and Mr. H. M. Pollett exhibited plants at South Kensington for which certificates were awarded, and at the last meeting (March 13th) a very strong plant was shown by Mr. Perkins from the Greenland Gardens, Henley-on-Thames, when a cultural commendation was awarded for it. Another peculiar variety of somewhat similar style—*i.e.*, D. nobile Tollianum, has

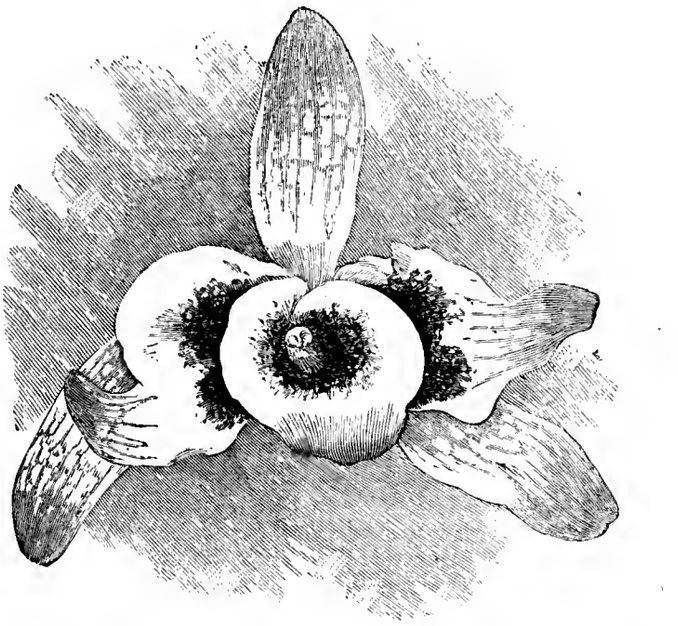


Fig. 29.—Dendrobium nobile Cooksonianum or Heathfieldianum.

the colouring more confined to the margins of the petals. A variety of D. nobile, also in flower at The Woodlands, is named Herbertianum, and in the richness of its colour it is almost equal to the

LÆLIA ELEGANS.

A grand collection of Lælias and Cattleyas has been formed, and some four or five large houses are almost exclusively devoted to them. Lælia elegans is another Streatham specialty. Some fifty or sixty plants of the best varieties yet introduced are grown, including such named forms as Cynanthus, mylcptha prasiata, and Measuresiana. Some recently imported plants of L. elegans have flowered this season, and amongst them are several very beautiful forms. One of these was found by a collector in his wanderings, and was so much finer than any hitherto seen that he named it "King of the Woods." Shortly after, another still superior form was discovered, which was named "King of all the Woods;" and a third, "King of all the Kings." If my memory serves me rightly it is one of these that has received the name Tautziana—at least, I had the good fortune to see a flower of this, which, both in size and colour, surpassed any I have seen before. From tip to tip of the petals it measured 6¾ inches, the petals being dark rose in colour, and 1¾ inch in diameter, the sepals of a rosy bronze hue. The lip was very handsome, 2½ inches across, dark crimson and rich magenta. There is something peculiarly noble about Lælia elegans and its varieties, and it is not at all surprising that Mr. Measures is so proud of them.

CŒLOGYNE CRISTATA ALBA.

Cœlogyne cristata, with its varieties maxima, Lemoniana, and the Chatsworth form, fill one house, and between 500 and 600 racemes have been expanded during the past and present months. Conspicuous amongst these, however, is a large specimen of the scarce and valuable C. cristata alba, which is probably the finest specimen in the kingdom. It has forty-seven growths, and has had thirty-two racemes of three to six pure white flowers each, which were only allowed to fully expand when they were cut off, as the strain was a heavy one upon the plant's resources. Some idea of the progress the plant has made can be gathered from the fact that two years ago it had only fourteen growths.

Much more remains to be said respecting the Woodlands Orchids; but it must be added that their condition throughout the whole collection proves the gardener, Mr. R. C. Fraser, to be not only a skilful cultivator, but one who takes a deep personal interest in the plants under his charge.—L. CASTLE.

LACHENALIAS.

I WAS very glad to see a few lines in favour of the more extended cultivation of the above in your issue of the 8th instant, and can fully endorse all your correspondent, "T. H.," says in their favour. I would,

however, strongly emphasise the value of L. Nelsoni above all others I know. Its fine robust habit, deep green leaves, and free-flowering qualities, added to its easy culture and freedom from insects, make it most invaluable. The strongest bulbs throw several spikes of bloom simultaneously. I have had as many as nine from one very strong bulb; each spike bears from nine to twenty-four bells. I have flowered L. aurea and L. quadricolor, and although very pretty in their way they seem to require more nursing with much less returns than L. Nelsoni.

I have grown for several years the following varieties:—L. stolonifera, L. pustulata, and L. rubida, but had not been able to flower them. I find the last named to be quite hardy. Having turned out a pot of bulbs last summer on a north border I see they have already pushed up about 2 inches, and that in spite of snow and frost. I have had pendula stand for one or two years under a south wall, and although it will live it will not thrive. I should think your correspondent, "T. H.," or any one who may have successfully flowered the varieties I have failed with, if they would kindly detail their method of culture in these columns I feel sure it would be of great interest to many besides — T. WINKWORTH.

Notes & Gleanings

EVENTS OF THE WEEK.—Although the weather is not very suggestive of spring, the shows have commenced, and during the week from the 22nd to the 28th inst. four will be held. There is one at Shrewsbury to-day (Thursday), at the Crystal Palace on Saturday, and at Glasgow on Wednesday. The Royal Horticultural Society will hold their first meeting at the Drill Hall, James Street, Victoria Street, on Tuesday, the 27th inst., which, it may be added, is readily reached from Victoria or St. James' Park Stations on the District Railway, or by 'bus from the city. The Society's supporters should make a special effort to render the meeting an attractive one.

—— THE WEATHER IN LONDON.—The day of our previous issue—Thursday the 15th inst.—was mild and spring-like; but since then a biting north-easterly wind has prevailed, with drizzling snow on most days, but not sufficient to cover the ground until Monday night, and there was a depth of about 3 inches on Tuesday morning.

—— THE WEATHER IN THE NORTH.—"B. D." writes:—"The country from Aberdeen southwards was in the middle of last week visited by a snowstorm of great severity. Nowhere was the general depth very great, from 6 inches to a foot, but the drifting was unusually heavy. Everywhere country roads were, and in many places still are, blocked up, schools closed, and communication generally suspended. 6° frost occurred last night (18th), 12° and 17° on the two preceding. The present storm, except that the frost is not so intense, bears in its character and progress so far a great likeness to that which we had four days earlier last year."

—— THE usual monthly dinner of the HORTICULTURAL CLUB took place on Tuesday the 13th inst. There was a large attendance of members, Mr. John Lee in the chair. Amongst those present were Dr. Hogg, the Rev. F. H. Gall, Messrs. Llewelyn, Crowley, Harry J. Veitch, Ball, H. J. Pearson, A. H. Pearson, J. L. Cousens, Geo. Paul, &c. The discussion was opened by Mr. T. D. T. Llewelyn, who gave an interesting account of Sikkim Rhododendrons in South Wales, and detailed many of the experiments which he is carrying out. As this was given from notes we are sorry to be unable to reproduce his most interesting remarks. A discussion took place afterwards, which was joined in by Dr. Hogg, Messrs. Paul, Veitch, Ball, and others.

—— WE have received the report and balance-sheet of the UNITED HORTICULTURAL AND BENEFIT SOCIETY, and gladly record the expression of our belief that this excellent institution is in a safe, sound, and flourishing state. Members and funds are increasing, and the amount now invested in consols is £4000. Mr. W. Collins, 5, Martinhoe Terrace, Martindale Road, Balham, London, S.W., is the Secretary of the Society.

—— A SUB-COMMITTEE of the GARDENERS' ORPHAN FUND, consisting of Messrs. Deal (chairman), Barron, Dean, Herbst, Richards, Roupell, Wright, and Wynne, was held on Friday night last for making arrangements for the first election of candidates and anniversary dinner on July 13th, and their recommendations will be considered by the General Committee on Friday night, the 23rd inst. Applications of candidates for the benefit of the Fund should reach the Secretary on or before April 23rd.

—— "E. J." sends us a few flowers of NARCISSUS PALLIDUS PRÆCOX to show the variation in size and colour. Some are as small as the minor variety of N. pseudo-Narcissus, while others approach the major forms in size. The colour ranges from nearly white to a clear yellow, the crown being much darker than the perianth in some cases. All are pretty, delicate, and valuable so early in the season.

—— ON March 13th Mr. T. F. Rivers delivered a lecture on the ORCHARD HOUSE to the Birmingham and Midland Counties Gardeners' Mutual Improvement Association. A large audience was assembled, and the lecturer was warmly thanked at the close of his address. We shall publish the lecture referred to in an early issue.

—— WE learn that Messrs. W. Paul & Son have a fine display of CAMELLIAS IN FLOWER AT WALTHAM CROSS this season, and they will be at their best in a few days.

—— SPECIAL displays of HYACINTHS, TULIPS, AND FLORAL PLANTS are also provided by Messrs. J. Veitch & Sons, Chelsea, Cutbush and Son, Highgate, and by Mr. B. S. Williams at Upper Holloway.

—— PRESENTATION TO MR. JOHN LAZENBY.—A correspondent sends the following paragraph—"At a meeting of the Ancient Society of York Florists, held at the "Golden Lion Hotel," Church Street, last week, Mr. John Lazenby, the Secretary, was the recipient of a very pleasing token of esteem and good will. Mr. G. Cowper, who presided, made the presentation in felicitous terms. He reviewed the long history of the Society, and alluded to the great services which Mr. Lazenby had rendered when its usefulness was very great. Mr. J. Robinson, Mr. G. Manton, Mr. J. Hume, Mr. Kirk, Mr. J. E. Wilkinson, and others added complimentary expressions to those uttered by the Chairman, after which the testimonial, consisting of a purse of gold, was handed to Mr. Lazenby, who suitably acknowledged this kindly recognition of his services. A vote of thanks to Mr. Rodwell and Mr. Burton, the Hon. Secretaries, and the presentation Committee, terminated a very gratifying incident."

—— ACCOMPANYING the schedule of the NATIONAL AURICULA AND PRIMULA AND NATIONAL CARNATION AND PICOTEE SOCIETIES (SOUTHERN SECTIONS), we have received from Mr. J. Douglas the note appended:—"It has again been decided to hold the exhibitions in connection with the Royal Horticultural Society; owing, however, to the transition state of that Society, the Council are unable to vote the usual grant of £15 to each Society as heretofore. Under these altered conditions, the Committee trust that members and friends will try to make good this amount. By the kindness of a few friends an extra sum was collected last year as a Jubilee gift. It was under consideration to expend this sum in preparing cards for certificates on a new and original design, a sketch for which has been prepared by Mr. Alfred Slocombe; under the altered financial conditions, however, it has been decided to postpone the preparation of certificate cards. The Committee suggest that if each member of either Society would obtain another by personal solicitation, a great success for the ensuing year would be assured." The National Auricula Show will be held in the Drill Hall, James Street, Victoria Street, on April 24th; and the National Carnation Show on July 24th, in the same place.

—— MR. C. PAGE, The Gardens, Fern Lodge, Bracknell, Berks, writes respecting GERMAN IRISES FOR FORCING, as follows:—"I doubt if many readers of the Journal are aware that these force readily. When calling on Mr. Lane, gardener to Miss J. D. Smith, King's Ride, Ascot, a short time ago, I was very much surprised to see several fine clumps in flower; also small pieces in 48 and 32-size pots, carrying four and five flowers. Mr. Lane informed me that they were lifted from the open ground about a month previous, potted at once, and stood in an early vinery. I do not think there are many flowers to equal them for specimen glasses, as their quaint shape and beautiful colours are then shown to advantage. I wonder they have not found favour with market growers."

—— THE second exhibition of the BOLTON CHRYSANTHEMUM SOCIETY will be held in the Albert Hall, Bolton, on November 23rd and 24th this year. The result of the first show last year is a balance of

over £15 in favour of the Society, and this has induced them to increase the prizes and extend the classes. The Hon. Secretaries are Messrs. J. Sefton and J. Hicks.

—— CEMENT FOR GARDEN VASE.—A correspondent thinks the following extracts from a London evening paper (the *Echo*) may be serviceable to "A. P.:"—1, Isinglass 1 oz., distilled water 6 ozs.; boil to 3 ozs. and add 1½ oz. of rectified spirit; boil for a minute or two, strain, and add, while hot, first half an ounce of a milky emulsion of ammoniac, and then 5 drachms of tincture of mostic. This is a splendid cement. 2, Dissolve quarter ounce of best isinglass in 1 oz. of glacial acetic acid. Apply to the edges, letting each set for a few days before uniting the whole.

—— GARDENING APPOINTMENT.—Mr. H. Rogers, gardener to Sidney Lawrence, Esq., Clapham Park, has been appointed to succeed Mr. Mill as gardener to Lord Rendlesham, Rendlesham Hall, Woodbridge, Suffolk.

—— THE MAIDENHEAD HORTICULTURAL SOCIETY will hold their tenth annual Show in the grounds of Braywick Lodge on Thursday, August 15th, this year. The Hon. Secretary is Mr. O. King, Ray Park Cottage, Maidenhead.

—— MR. W. MOWBRAY, gardener to the Earl of Leven and Melville, in sending us from Fulmer Gardens a number of CINERARIA blooms, writes:—"The plants are in 32-size pots, some of the heads of flowers being 20 inches across. They have been grown in a pit, not a house, and I hope the flowers will arrive in good order." The blooms are among the finest that have been sent to us, some of them exceeding 3 inches in diameter, with the florets overlapping to the extremities. The colours are also varied and good. Mr. Mowbray is to be complimented both on his culture of the plants and method of packing the flowers. A box, 2½ inches deep, was nearly filled with close wet moss and the blooms affixed in it. They arrived as fresh as when cut. When Cineraria flowers are placed in a box without any packing material, or are surrounded with dry cotton wool, they almost invariably arrive in a crushed and withered state. Mr. Mowbray is not a vendor of seed. Mr. J. A. Brown has also sent us some good blooms, but not equal to those above mentioned.

—— THE schedule of the KINGSTON AND SURBITON CHRYSANTHEMUM SOCIETY for the present year gives the date of the twelfth Show as already announced (Nov. 6th and 7th). A fifth champion challenge vase, value 25 guineas, is offered under the same conditions as the previous ones, and the usual classes with liberal prizes are also provided. The balance-sheet for the past year shows a decrease in the receipts, owing chiefly to the unfavourable weather, but the expenses are moderate, though one item is rather alarming—namely, "Judges' fees, dinners, and refreshments, £15 11s. 11d.," which would appear as if the five Judges had very remarkable appetites or were regaled in a sumptuous manner. Probably, however, they receive some assistance in the latter portion of their duties. The Hon. Secretary is Mr. G. Woodgate, Warren House Gardens, Kingston Hill.

—— THE ANCIENT SOCIETY OF YORK FLORISTS will hold their annual Exhibition of Chrysanthemums in the Fine Art Exhibition Building, York, on November 14th, 15th, and 16th of this year, and a comprehensive schedule has been drawn up, comprising two silver cups amongst the first prizes. Mr. John Lazenby, 8, Spurriergate, York, is the Secretary. It is surprising that the Committee should have so fixed their dates as to include the opening day (Nov. 16th) of the National Society's provincial Show at Sheffield, especially as the dates of the latter have been announced for a considerable time. Very little care seems to be exercised in some cases to avoid the clashing of shows, which is unfavourable to the success of all Societies within a short distance of each other.

FRUIT AT THE NEWCASTLE SHOW.

WHEN reading Mr. Goodacre's last contribution on the above subject, together with that from "One of the Judges," I was driven to the conclusion that someone must have played a practical joke upon Mr. Goodacre. I am surprised at his credulity in matters of this kind. All through this discussion he has taken care to exclude the fact that he was an absentee from the show, and was relying entirely upon information supplied to him by an irresponsible party. Twice I have pointedly challenged the truthfulness of his assertions. Instead of meeting my challenge in a fair and straightforward manner he persists in plunging deeper into the mire, and declared the first prize collection contained "one dish or peck of Tomatoes [a statement corrected last week], one of unripe Citrons, six dishes of unripe Pears, seven dishes of unripe Apples (mostly culinary varieties), two dishes of unripe Plums." I unreservedly say there is no truth in these allegations. The same remark is applicable to his comments upon the Citrons, Apples, and Pears in the second prize collection. But perhaps Mr. Goodacre is not aware of the fact that some so-called "culinary varieties," such as Cellini, Lord Suffield, Maiden's Blush, and Peasegood's Nonesuch when grown under glass are indeed excellent dessert Apples. I believe that all those exhibited from Lambton Castle and Hutton Hall were orchard-house-grown fruit.

I am asked if I "can get a couple of conscientious, disinterested, practical gardeners to say in plain English that the awards were justly made and in accordance with the stipulated conditions of the schedule." I have no difficulty in so doing, and therefore name Mr. Lewis Castle and Mr. Edwin Molyneux; these gentlemen will in every way fulfil the desired conditions, and their opinion will command the confidence and respect of almost every reader of the *Journal of Horticulture*. They were both at the exhibition, and to my knowledge spent considerable time in thoroughly examining these Jubilee collections. Mr. Goodacre can appeal to them if he likes.

As Mr. Goodacre has not correctly quoted the stipulated conditions for the Jubilee prize, I herewith enclose the printed form as issued by the Society. If Mr. Goodacre is really in ignorance as to the names of the gentlemen who officiated as Judges he can easily obtain this information from the Secretary at Newcastle. Assuming that Messrs. Castle and Molyneux will act as referees, I would in addition to Mr. Goodacre's questions beg to submit the following:—

1st, Did Mr. Goodacre, as he alleges, exhibit in his collection eight distinct varieties of ripe Pears (see page 132)?

2nd, Did he exhibit a dish of ripe Doyenné d'Hiver!

3rd, Was one-half of his Gooseberries and Currants in a fit state to put on an exhibition table?—AN OLD HAND.

UNDER this heading a discussion has been going on for some time in the pages of the Journal. The collection of fruit from this garden has had a large share of attention and some condemnation from Mr. Goodacre. As a rule I do not take part in such discussions, especially where the attack is made by an interested and disappointed exhibitor. In all my exhibition career I have endeavoured to stage produce that could speak for itself and stand criticism, and when defeated, as I have been, and expect to be again, I have bowed to the decision of the judges without protest. I would have refrained from saying anything in this case, especially when having to speak as to the merits of one's own productions, which is better done by impartial persons, had it not been for the turn the discussion has taken and the remarks Mr. Goodacre has made, which exceed the bounds of fair criticism. As far as these remarks refer to the premier collection of fruit they are, to speak plainly, inaccurate and misleading, and though some of them have been refuted by "Old Hand," yet they are still reiterated by your correspondent. I feel I shall be doing a service to your readers in giving not only a flat and final denial to these assertions, but in placing some facts and particulars before them regarding the fruit in question.

Here is the sweeping assertion Mr. Goodacre makes, "Yet we find the first prize awarded to a collection not only deficient in the stipulated dishes, but containing at least one-third of unripe coarse fruits and some dishes that never would be fit for the table, as the following particulars will show—first, one dish or peck of Tomatoes." I had not one in my collection, and never showed such as a dish of fruit in my exhibition career. "Second, one of unripe Citrons." These were gathered, or rather allowed to fall into a net about three months before the Show, and were kept under bell-glasses in a cool fruit room, as my only fear was whether I could keep them, but they turned out a beautiful golden colour, of great size. Lemons were gathered in a similar fashion, and turned out perfectly ripe. The Pears were Beurré Diel, Durondeau, Beurré Giffard, Williams' Bon Chrêtien, Brockworth Park, Pitmaston Duchess, Souvenir du Congrès, and Marie Louise. The first was grown in a Peach house started in January, and the six fruits weighed 117 ozs. The Apples were White Calville, Cellini, Worcester Pearmain, Lord Suffield, Jefferson, Ringer, Ribston Pippin, and Blenheim Pippin. "Plums," to use the words of your able reporter in the Journal, "were fine." Mr. Castle can also vouch for seeing the Citrons in our fruit room. Mr. Goodacre, in a former communication, mentioned my showing Warner's King, which is untrue. My collection was not deficient in a single dish, as mentioned in the schedule; nor short or above the quantity where stipulated, and every dish was ripe and fit for the table. These are facts your readers can place against the assertions of our critic, who has the audacity to pass judgment upon a collection of fruit which he never saw.

My greatest difficulty was not in getting the fruit ripe but in keeping it, and for thirty days we had both Pears, Apples, Plums, &c., placed away in an underground ice-house, and I lost some dishes of early Pears. All the Pears, Apples, and Plums shown by me were grown under glass, the trees were brought into heat at various times from the month of January, and grown in temperatures varying from that of a cold pit to a Pine stove to suit the late and early varieties. I have under glass eighty-five varieties of Apples and sixty-seven of Pears in pots, besides an orchard house 324 feet long full of the finest varieties planted out and grown as cordons. Outdoor fruit cannot compete with the produce of such trees, especially at the end of August, when the Show was held. I could have placed twenty dishes each of Pears and

Apples ripe on the table at the time without a speck or spot. If Mr. Goodacre intended frightening us northerners he ought to have brought something different from the samples he sent, which will long be remembered by the gardeners at the Jubilee Exhibition. After all, I think Mr. Goodacre has been very fortunate, for had any flaw or error been found in either the first or second collection sufficient to disqualify them, we have it on the authority of "One of the Judges" that his collection would have remained where it was - third. Mr. McIndoe showed a remarkably fine collection, and I should not have quarrelled with him had he been placed equal, although he agreed that the Judges were right.—J. HUNTER, *Lambton Gardens.*

PERHAPS I may state in a few lines how the controversy initiated by Mr. Goodacre strikes an outsider who is unacquainted with any one of the exhibitors, judges, or even attendants at the above Show. If the schedule stated that the dishes of fruit were to consist of ripe fruit and a certain number of dishes of each kind, then I say if the fruit was not all ripe and the number of dishes of each variety as per schedule in the competing exhibits, no prize should be awarded to any exhibitor who failed in either of these respects. If the rules of a schedule are not adhered to what is the good of any rules? I have not yet seen it fairly proved that any one of the three exhibits consisted of all ripe fruit and the numbers of dishes as per schedule.

I must add I sympathise with Mr. Goodacre in his complaint of contributions on controversial subjects not being signed by the writer's proper name. If a man has the courage of his own opinions and attacks another let him sign his name in proper English fashion.—H. S. EASTY.

PEACH TREES CASTING THEIR BUDS.

PEACH trees casting their buds is rather more prevalent this year than usual, especially in early houses and with large-flowered varieties, such as Hale's Early, Barrington, and Grosse Mignonne. I am inclined to accept Mr. Barker's theory as the correct one, and the remedies he advocates are the most feasible that I have yet heard. I have endeavoured to discover the cause, and have observed that the long time our early Peaches remain dormant during the hottest period of the whole year dries up the buds rather than ripens them. For instances last year we had a Grosse Mignonne, from which all the fruit was gathered by the end of May; and although the tree was well attended to it was leafless by the middle of August. The buds began falling in October, and by pruning time some of the wood had scarcely a bud left. This wood, as might be expected, was nearly as hard as ebony to cut; the centre was the colour of mahogany, while the bark was very thin, but quite healthy. This tree is now swelling as good a crop of fruits as we can desire. Any excessive fluctuations of temperature after the buds commence swelling will cause them to fall as with unheated houses in the spring.

I have noticed where trees once lose their buds they are more or less liable to continue doing so, especially if left in the same position, and sometimes I think the stock has something to do with it. I have only seen one instance that I remember of outside trees casting buds, and this was a standard Walburton Admirable, a parently in perfect health. But whether they shed their buds or not, it is a step in the right direction to lift the trees and add a little fresh loam to the roots; but when is the best time to do this? I have lifted trees in June with fair success. By keeping the house close, densely shaded, and heavily syringed for two or three weeks, and gradually admitting air and sun, by the end of a month they are all right, and any little top growth they make may be removed from time to time.

I also believe it is an advantage to thin the buds when they begin swelling, especially the large-bloomed sorts. In very light soils I believe a little salt may be used with advantage, but this must be done constantly and after the fruit has stoned. But a long chapter might be written upon Peach culture, and views exchanged with advantage.—J. H. GOODACRE.

IS it not possible that in the case of early Peach trees losing their buds in showers at the time the trees commence growth, they may have been injured by excessive heat, say the hot scorching sun together with a dry parching atmosphere? I incline to think that the misehief is done at some time previous to starting them into growth or during their resting period. With early forced trees this evil is most marked, the buds being more or less in an advanced stage of development during the hottest part of summer, and probably the most forward may be the first to suffer. We never had better bloom than that of this year. The earliest trees were covered with strong flowers, and at the time of starting scarcely a single bud fell. I may say that in addition to our usual practice last year—viz., supplying the roots with abundance of water and giving the trees a daily bath—during the intense heat we never allowed the house to become parchingly dry, the evaporation pans too were kept filled, and this practice will be extensively carried out with us for the future. I may further state that although the same trees the previous season seem to be in better condition, the shoots browned and better ripened, we lost many buds, and on cutting several in halves I found the centre to be quite black as if they had been damaged for some months previous, and not unlike a burn.—H. MARKHAM, *Mereworth Castle.*

PLEASE permit me to record my success in securing a good set of fruit on Peach trees after three seasons of failure. Different treatment has been given to the trees every season. Some have been lifted and planted in fresh soil, others root-pruned, putting back the old soil but well beaten to make it firm; others were top-dressed with strong manure. The buds fell from all alike. In previous seasons I only used fire heat to keep out frost, because plants were wintered in the house, but this year they have set their fruit well owing to the fact that fire heat was employed continually from the time the buds were seen to be swelling. The trees were well syringed twice a day until the flowers expanded. After they were set the syringe was again employed and fire heat kept at 55°.—DAVID JONES, *Hartsheath, Mold.*

RECLAIMING SANDBANKS.

COULD you find room in the Journal for this note in reference to reclaiming sandbanks? The plant referred to as Ammophila arundinacea is identical with Mr. Moorman's plant. It is also known under the names of Psamma arenaria and Arundo arenaria; its English name is Sea Mat Grass. Local English names, as a rule, are very misleading, but Mr. Moorman's name is rather appropriate, for the spiked panicle somewhat resemble an ear of Wheat, and its running roots, hence Bindwheat. It is known in the neighbourhood of Southport as Star Grass, and I have seen notices cautioning persons against pulling this Grass. The leaves are not round as they appear to be, but are involute—that is, the edges of the leaves are rolled inwards, thus giving them a Rush-like appearance. The plants are commonly planted about Southport, as I have seen years ago, and Loudon in "Encyclopædia of Plants," says it has a strong creeping root with many tubers at the joints the size of a pea. It is planted and encouraged on the coast of Norfolk to aid in fixing the sand against the action of the wind and tide, which it effects in a surprising manner. The Marrum, as it is called, is considered of so much importance that there are severe laws to prohibit its being destroyed. Mats are made of it, and it is used as thatch.

I should think that Mr. Moorman's informant about its having been imported from Holland must have been wrong, for I do not believe that there is a sandy coast of any extent in Britain where this plant does not grow, for I have seen it in its glory all along the Welsh coast from Chester to Aberystwyth, and northerly from Liverpool into Westmoreland, and I daresay following right into Scotland, for I have seen it abundantly on the sands of Barry, near Dundee; then, again, on the east coast at Hartlepool, Hull, and I am informed that it grows abundantly on the Lincolnshire coast; then we come on the Norfolk coast before mentioned, and if a native of Italy, and introduced into Britain by a local farmer, it certainly must have been a long time ago.

There are also other plants that act the same way, but probably in a less degree, such as Carex arenaria and Elymus arenarius. The Elymus arenarius is a beautiful Grass, rising to a height of 3 or 4 feet, with broad glaucous leaves, thus giving it a noble appearance. The Ammophila in general appearance is very much like Lygeum spartium, the Esparto, or Spanish Grass, so extensively used in the manufacture of paper. Its qualities are, I am informed, superior to common rags. It is imported by thousands of tons annually, and I see no reason why the Ammophila should not answer the same purpose.—JAMES PERCIVAL.

THE following extract from Lindley and Moore's "Treasury of Botany" will, perhaps, be interesting to Mr. J. W. Moorman. "Ammophila, a genus of Grasses of the tribe Arundineæ, inhabiting the sandy seashores of the coasts of Europe and North America, and extensively cultivated in many places, as in the eastern counties of England and in Holland, for preserving the sandbanks which prevent the inroads of the sea. It is the widely creeping and matted rhizomes which serve to bind together the sandbanks on which it grows. The only species, A. arundinacea, or Psamma arenaria, is variously called Maram, Marram, Sea-weed, or Sea-Matweed." I do not think there can be any doubt as to the identity of the plant used by Mr. Muir and that observed on the Sussex coast.—T. S.

THE Grass which grows on the sand near Rye is Ammophila arenaria or Psamma arenaria, as it is called in Hooker, but I rather imagine by the reference to a Rush-like Grass, and by the local name of Bindwheat, that Triticum junceum, which almost invariably grows with and amongst it, is confused with it. It is, however, the root of Ammophila which binds the sand together, and when it is stated that the roots exceed 20 feet in length its binding power will be conceived. As he states, it is a native of the South of Europe and north coast of Africa. It has been extensively planted in Norfolk, the Hebrides, round Calais, Egypt, &c. It is very doubtful when it was introduced into England, but it was well known in Queen Elizabeth's reign, when an Act of Parliament was passed to prevent people destroying it. It is stated that the town of Hull owes its preservation from being washed away to this plant being planted on the shores there.—J. R. NEVE, *Campden. Glos.*

BEAUMONTIA GRANDIFLORA.

OLD inhabitants of British gardens are occasionally brought into notice at the meetings of the Royal Horticultural Society, and they are often quite as welcome as novelties, and sometimes much more beautiful. Beaumontia grandiflora must be ranked as one of these, for though it has been grown in England for about seventy years it is seldom seen in modern gardens. Within the past two years attention has been twice called to it at Kensington. On April 27th, 1886, Mr. Ruffett of Pan-

shanger Gardens, Hertford, exhibited specimens, for which a first-class certificate was awarded by the Floral Committee; and March 13th this year Mr. J. Anning, Digswell House Gardens, Welwyn, Herts, sent well-grown examples of the same plant, for which a cultural commendation was adjudged. From the latter specimen our engraving (fig. 30) was prepared.

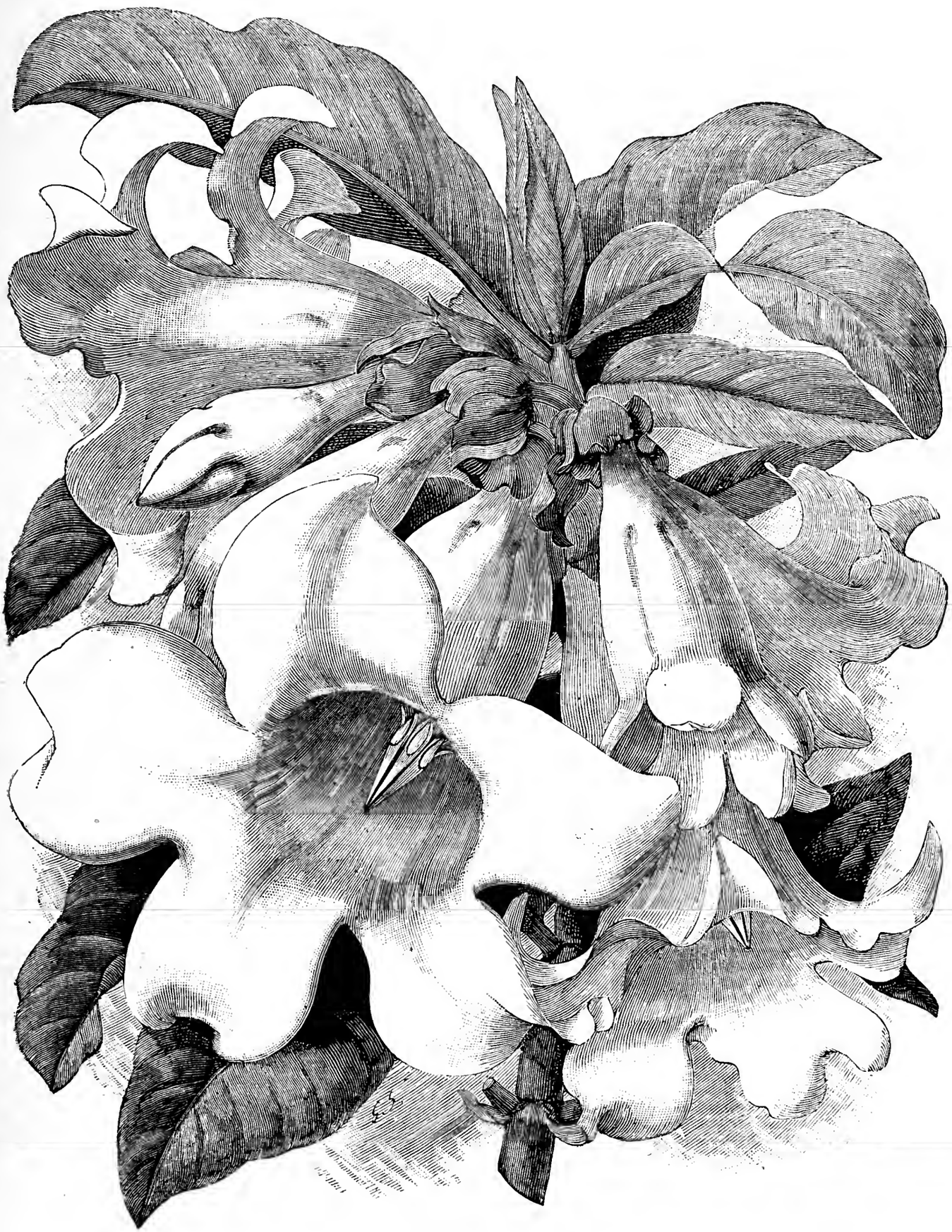


FIG. 30.—BEAUMONTIA GRANDIFLORA.

Beaumontia grandiflora is a relative of the genus Echites, under which it has passed, and it is included in the same family, the Apocynaceæ. It is of strong growth, but of climbing habit, and is usually trained to the walls of a stove or warm conservatory, where it has plenty of space. The leaves are somewhat like those of Luculia gratissima, but rather thicker, and dark green, 6 or 8 inches long by 3 or 4 inches in breadth. The flowers are borne in terminal or axillary corymbs; the corollas being about 6 inches long and 4 inches broad at

the mouth, funnel-shaped, with five broad lobes, pure white, and possessing a strong fragrance. The plant is a native of Chittagong in India, and sent by Dr. Wallich in 1818 to Messrs. Whitley of Fulham, with whom it flowered 1825, and it was figured in the "Botanical Register" for that year. A compost of good turfy loam, leaf soil, and plenty of sand suits it, and the temperature of a warm conservatory is even better adapted for it than an ordinary stove.

VALUABLE BOTANICAL AND GARDENING BOOKS.

It may interest some of your readers to know the price realised for certain works on botany and gardening at the recent sale of the Aylesford Library by Messrs. Christie, Manson, & Woods. Andrew's Engravings of Heaths, 4 vols., folio, calf gilt, £13 15s. Besleri Hortus Eystettensis, 3 vols., £5 5s. Bute, Earl of, Botanical Tables, 9 vols., £60. Chandler & Booth's Camellias, 1 vol., £4. Brunfelsii Herbarium, 2 vols. in 1, 27s. Clusii Exoticorum lib. x., Rariorum Plantarum Historia, 2 vols., 32s. Edwards' Botanical Register, 33 vols. and appendix, calf, £35. Dethicke's Gardeners' Labyrinth, 1 vol., £10. Curtis's Flora Londinensis, £13 10s. Curtis's Monograph of the Genus Camellia, £3 15s. De Tussac Flore des Antilles, 4 vols., £41. Duhamel du Monceau Traité des Arbres et Arbustes, &c., 7 vols., £49. Duhamel du Monceau Traité des Arbres Fruitiers, &c., 6 vols., £47. The Grete Herball, 1526, £8 8s. Herbalaria Vulgare, 1522, and Plantarum Effigies, 2 vols., £5. Hooker's British Jungermannia, £9 10s. Horticultural Society's Transactions, 10 vols., 78s. Hortus Ericæus Woburnensis and two others, 24s. Knight Pomona Herefordiensis, 29s. Hofland, Mrs., Description of White-Knights, £2 15. Noisette et Gautier Jardin Fruitier, 45s. Repton's Fragments on Landscape Gardening, £4 15s. Repton's Sketches and Hints on Gardening, £2 4s. Redouté Les Liliacées, 8 vols., morocco, £47. Redouté Les Roses, morocco, £23. Redouté Choix des Belles Fleurs, morocco, 1 vol., £12 10s. Redouté Histoire de Plantes Grasses, morocco, 2 vols., £10 5s. Scott Perfitte Platform of a Hoppe Garden, and Mascall, the Arte of Planting and Graffing, 1 vol., £7 15s. Watson's Dendrologia Britanniea, 2 vols., £5 15s. This class of books seems rising in value. I have several of them and others in my library, purchased a few years ago, at much lower prices than those recently realised.—William Paul, *Waltham Cross, Herts.*

PROTECTING FRUIT BLOSSOM.

The articles of "A Kitchen Gardener" are always read with interest, and these few remarks are not intended to be a criticism on his seasonable notes on the above subject, but merely supplementary. Although considerable differences of opinion exist as to the necessity of protecting fruit trees while in bloom, it is generally conceded that in exposed situations is more beneficial than otherwise. The greatest difficulty is how to protect them effectively without exceeding the cost of production, for any system which does so will not long commend itself to the owners of gardens. Now that fruit-growing is so extensively conducted, there are doubtless many methods in operation to save the blossom from frosts, and if those in charge would publish the systems which they have found most successful, in the manner "A Kitchen Gardener" has done, much good would doubtless result. I have proved from experience that the same practice does not succeed equally well in all localities.

A portion of the wall space here chiefly covered with Peaches and Apricots was nearly always a failure as regards a crop of fruit, although ordinary precautions with nets, as recommended by "A Kitchen Gardener," were taken to protect the blossom, and yet a few miles off the same kind of protection was as satisfactory in its results, as noted by your correspondent. A glass protector proved effectual for most of the Peaches, and the difficulty regarding the other trees was met by a mode of protection which may be of service to some others similarly situated. The scathing effects of east winds are very noticeable on walls where there are no buttresses projecting to break their force, or where there is no plantation sufficiently high, as in our case. To lessen their violence two 9-inch boards braced together are placed close to the wall, jutting out at right angles from it, and fastened by means of two screw nails to an iron stay about two-thirds up the wall—this proving quite sufficient to steady it. These temporary shelters are placed about 30 feet apart and connected at the top furthest from the wall by a half-inch rod of iron, the rods being flattened at the ends, and a hole made to fit a hook which is screwed into the boards; this forming a continuous length as far as required. To keep the rod from swaying or bending downwards, brackets to support it are fixed into the wall in distances of about 10 feet from each other. Along the top of the wall is stretched a wire, and then all is ready for the coping, which consists of branches of Yew or any other shrub, between 3 and 4 feet in length. We find Yew the most suitable, being less liable to be caught by the wind than larger leaved varieties, besides being more cleanly. The branches are spread thinly along, barely touching each other, the thick end being tied to the wire on the wall, and the other end fastened to the rod which it overhangs. The effect of this protection is very marked. Instead of a crop of Apricots once in eight years there has been a fair crop each year since it has been used; and on the Peach trees—not inside the protector—where blistered leaves were once prevalent scarcely one is seen now. No ill results from the shade of the branches is anywhere noticeable, the trees being all as healthy as before it was used, and when the work is finished its appearance is not at all unpleasing.

When all danger of frost is over, the protecting branches are taken down, and the iron rods unhooked and stowed away overhead in the barrow-shed. The boards generally remain a fortnight longer to break the force of the wind on the young growth, then they are taken down and put away in the same place until required the next season. The cost of material is but trifling when its durability is taken into consideration, and the time taken to erect and remove again merely nominal.—M. D.

THE CULTURE OF FREESIAS.

I am pleased to see that the few remarks by me on the value of the Freesia have found so able a supporter as "J. H. E." He, however, seems somewhat incredulous in regard to my statement respecting their powers of reproduction, and gives me credit for more than ordinary success. This, however, I cannot admit, having seen equally good results obtained by other growers who followed a similar line of culture to that described. To verify my statement by one instance, I obtained from a grower, who had potted what he required, a few medium-sized bulbs. These were placed in half a dozen 32-size pots, flowered well, and the following season, after potting, filled eighteen pots of the same size. I had remaining both a larger stock and a better sample than that with which I commenced the previous year. Respecting the time of potting I may say that this seems important, and I recommend June or July. They can be thoroughly ripened by that time, and the bulbs will be found one mass of fleshy white roots by the end of September, which must surely give them a great advantage over those still in a dormant state. The bulb merchant's catalogue will form but a poor guide to the proper time for potting other bulbs besides the Freesia. The early ripened must wait for the late.—J. C. A.

Your correspondent, "J. H. E.," page 199, doubts if the Freesia will treble its produce of flowering bulbs in one year. I can fully endorse what appeared in a previous number on this subject, as I have been growing them for several years, and find that under good cultivation it is by no means an uncommon occurrence.—Foreman.

A short time back a contributor to the subject of Freesia growing stated he had flowered them within twelve months of sowing seed. If you think the following worth a note you might insert it in your Journal. I sowed seed of Freesia on August 22nd, 1887, and have now (March 10th) flowers on some of the plants produced. Is the Freesia a recently discovered plant, or is it a new name for an old plant?—E. T. Cossom, *Gardener to the Right Hon. H. Campbell-Bannerman, M.P., Hunton, Kent.*

[Freesia refracta alba has been prominently before the public for about ten years, as it was certificated by the Royal Horticultural Society in 1878.]

PROPAGATING TREE CARNATIONS.

At all times of the year from January to December the flowers of Carnations are always welcome. Those who require exceptionally large plants and early autumn blooms should strike cuttings in the autumn, while the majority who need these flowers when Chrysanthemums are past will do well to push on with their propagation at once. The best cuttings which can be had for present propagation are those produced from the main flowering stems, the young shoots which upon some form so readily in the axils of the leaves, in a cool temperature, say from 45° to 50°. They are best when about 3 inches long, and should be detached from the parent plant with a heel. Such cuttings as these will need little preparation before being inserted, or at the most it may be only necessary to remove the lower pair of small leaves. The kind of soil well suited for them at this stage is equal parts of loam and leaf soil, the latter thoroughly decomposed, and the whole made very sandy but not very wet. Where there is abundant room at disposal and a gentle bottom heat of from 60° to 70° there need not be much trouble in raising a good stock of these useful winter flowers. I am much in favour of inserting the cuttings singly in very small pots, for this reason—Carnations do not all root at one time, even though the cuttings may be in as nearly as possible the same condition when inserted, and to leave them in the cutting frame till all are rooted means making those first rooted weak and sickly, while to take them out is only done at the sacrifice of those not rooted. Another advantage accruing from the single-pot method is that the operator is saved the trouble of potting them when rooted, as when this is done from store pots every care is requisite to prevent their threadlike roots being torn off.

Depending entirely upon the weather, I do not water my cuttings for from four days to a week after insertion, and then give sufficient to penetrate the whole of the soil. The pots are plunged two-thirds their depth in cocoa fibre refuse, and the frame kept close till they receive the first watering, when the lights are left off a sufficient time to allow of the tops (cuttings) becoming quite dry. Dewing or sprinkling them from time to time is deadly to them, and should be carefully avoided. Aphides are often very injurious to the cuttings. As a precautionary measure I have in readiness a weak solution of quassia and softsoap, into which the cuttings are dipped before being inserted, afterwards allowing them to dry thoroughly before being placed in the pots. Whether green fly be in existence or not, this is by no means time lost, but should they exist even in small numbers, it will be time saved,

especially when we consider their much more rapid increase in the warmer and closer atmosphere of the cutting frame.—J. H. E.



ROSE SHOWS IN 1888.

June 28th.—Brockham and Ryde.
June 30th.—Eltham and Reigate.
July 3rd.—Bagshot, Canterbury, Diss, and Hereford.
„ 4th.—Croydon, Hitchin and Richmond.
„ 5th.—Bath, Farningham, and Norwich.
„ 6th.—Sutton.
„ 7th.—Crystal Palace (National Rose Society).
„ 10th.—Ipswich.
„ 11th.—Ealing and Tunbridge Wells.
„ 12th.—Winchester.
„ 14th.—New Brighton.
„ 17th.—Leek and Ulverstone.
„ 18th.—Birkenhead.
„ 19th.—Helensburgh.
„ 20th.—Darlington (National Rose Society).
„ 21st.—Manchester.

There are still a few fixtures which I shall be glad to have, and which I hope will reach me in time for insertion in my next list, which will appear early next month.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

THE GLOUCESTERSHIRE ROSE SOCIETY.

A LARGE and influential meeting of ladies and gentlemen of the city and county was held at Gloucester on Saturday, the 17th inst., for the purpose of starting a Rose Society for the county, the result of the meeting being the formation of the above Society, which promises to be exceedingly well supported. Mrs. Gambier Parry of Highnam Court, Gloucester, was unanimously elected President, and several ladies and gentlemen of the city and county consented to act as patrons and patronesses. An influential Committee was appointed, and the Rev. T. Holbron, Sandhurst Vicarage, Gloucester, and the Rev. F. R. Burnside, Chipping Campden, were elected Hon. Secretaries. Mr. Hatherley, manager of the National Provincial Bank, Gloucester, was appointed Treasurer. The first Show of this new Society will be held in the Corn Exchange, Gloucester (a room admirably suited in every way for a Rose show) on Thursday, July 12th. The Committee hope to be able to frame a liberal schedule, which will be issued by the end of April or the beginning of May.

SOLUTION FOR PREVENTING MILDEW ON ROSES.

"A. B., *Ayrshire*," should dissolve half a pound of softsoap in a gallon of hot water, then add half a pound of flowers of sulphur, which must be thoroughly mixed previous to adding the petroleum, about 8 ozs. of which will be sufficient. He will then have a mixture sufficient to use with ten or twelve gallons of water, and if used in a tepid state all the better. The above will be sufficient to syringe a good sized Rose house with.

MARÉCHAL NIEL ROSE.

YOUR correspondent, "N.," does not admit my plants of the above are forced, at any rate they are assisted. I cut the first flowers on February 19th, and have cut several since. I have three plants of Maréchal Niel in an unheated house, and they are only just commencing growth. I have had no mildew on those plants referred to last week; but I freely admit I have had plenty of trouble with it on other varieties; but by the use of the mixture referred to in the preceding note I am able to keep it well in check.—W. W., *East Yorks.*

MY ROSES IN 1887.

I HAVE already (some months ago) given in the Journal my view of the Rose season as regarded its general aspect, and shall, as far as possible, avoid all generalising, and refer only to my own garden. But what a season it was! how perplexing and worrying to all owners of a garden the long spell of cold weather, in which everything seemed to stand still! and then the long-continued drought, when day after day blazing sun, drying winds, and dewless nights added to their difficulties, and when watering was the principal work to be thought of and done. With many, however, this was an impossibility; gardens had to go without, for there was little enough for domestic uses. Happily I am not on a "dry and thirsty land." We are on the chalk formation, and have an abundance of springs about us in all directions. This advantage, however, I think, somewhat interferes with the earliness of my garden. My position is sheltered and well exposed to the sun, but yet we are always late here. I believe this is to be accounted for solely by the low temperature of the soil, occasionally as I imagine by the number of our springs; but at any rate, during such a season as the last, "we have the pull" over those who are earlier but drier.

I have made no alteration in the kinds of Roses I cultivate, I mean as to stocks. Much has been said and written about standards, notably by Mr. George Paul in the "Rosarians' Year Book," while in a contemporary I see a well-known writer, "D. T. F.," writing on the "Return of the Standards." This is a consummation most devoutly not to be desired. I do not believe in the superiority of the blooms to be had as maidens from these, for I believe that equally good can be obtained from the seedling Briar; and one must never forget that one who, considering the quantity of plants that he grew was, I consider, our chief amateur grower in past days, always grew his Roses on the Manetti, and always exhibited from cut-backs, I mean Mr. R. N. G. Baker of Exeter. Sometimes it is said the staying power of Roses thus grown is greater, but have we not the authority of "D. T. F." himself that the box of Roses which he exhibited at Norwich were of such surpassing beauty as to excite his wonder and admiration, even after their long journey from Exeter across London to Norwich? Moreover, those who are weak enough to think of reinstating standards must be prepared for a collapse when the first severe frost comes. I shall never forget the splendid piece of standard Roses which I saw with old Margottin at Bourg la Reine, or the pride with which Jules showed them to us, and yet not one of them ever came to the market—they were all cut off by frost. There are a few cases in which standard Roses may be tolerated, but only a few. I have seen scores of weeping Roses, and a few will not be out of place in the back row of a Rose border; but I have no hesitation in saying that, whether for beauty or utility, the less the general amateur has to do with them the better.

As far as my own garden was concerned the season for the Hybrid Perpetuals was a short but a merry one. My beds were a blaze of colour and beauty for about ten days, and then all was over; but not so with the Teas for a month. Although I have, comparatively speaking, few plants, I had a succession of lovely blooms, those on the wall first giving me their blooms, and then those in the beds. The hot weather did not seem to improve them, and although the autumn was cold and cheerless, yet I had a succession of good blooms. I may say, too, that preceding all these my Maréchal Niel, still nominally in a pot, gave me about 350 blooms, not of large size or deep colouring, but still very pretty useful blooms. I see as yet no signs of canker, but am hopeful it may continue for a little while longer. The difficulty is to give it space to grow, and as I cannot permit it to fill up the house a quantity will have to be cut out. I have made some little alteration on my wall, having taken away a plant of Perle de Lyon, which rarely opened its bloom, and have placed in its stead one of a pretty and comparatively unknown Rose which I saw with Mr. George Bunyard at his celebrated nurseries at Maidstone, Claire Carnot. It somewhat reminds one of Celine Forestier, is of the same lovely yellow colour, but a better Rose; it is like it, too, as a Noisette of good habit. I have another Tea, Madame Jules Margottin, which is not satisfactory, and this I have also displaced and put in its stead another Rose which Mr. Bunyard highly recommended, Emilie Dupuy; it is of the Gloire de Dijon race, but he describes it as very good, and a bloom I saw of it made me think it would be an acquisition. I have also a strong inclination to disestablish Belle Lyonnaise; true it grows well and flowers freely, but the flowers are very apt to come split and quartered, and I think one may dispense with such Roses nowadays. I have also added some new ones to my small lot—Earl of Dufferin, Lady Helen Stewart, Miss Ethel Brownlow, Sir Rowland Hill, Duchess of Leeds, Princess Beatrice, Victor Hugo, Madame Joseph Desbois, Madame Desiré, Raoul Galliard, and also two Roses, one of which I never saw or heard of till I saw it in Messrs. Cooling's of Bath, and of its origin, where raised, or by whom sent out the catalogues reveal nothing—Countess of Limerick: it is a perfectly shaped Tea Rose, white, with a faint tinge of pink. The other is Laurette. This I have known for years; it was always exhibited by Capt. Knight and Mr. W. H. Wakeley at our East Kent shows, but I never saw it anywhere else till I found it also with Messrs. Cooling's. I do not know when or by whom it was sent out, but it is a very pretty Rose, white, with faint pink edging, somewhat of what may be called a refined Homère. Of these Roses I shall have, if spared, to report by-and-by. I have during the past year added another bed of Teas, a small one, for they are so very satisfactory and bloom on to so late a period that one can hardly have too many. So thinks my friend Mr. Alex. Hill Gray, but we cannot all build "fortifications" as he has done. I do not, however, think that those Rose growers are wise who talk of discarding nearly all their H.P. and substituting Teas. This is running into extremes. We cannot do without the brilliant colouring of the H.P.'s, however much we may admire the refined delicacy of the Teas.

Who grows the Austrian Yellow single Briar? One of the most beautiful sights in the way of Rose trees was a bush of this in a cottage garden in my parish, a shower of lovely gold-coloured blossoms, and yet wanting to get it for my own garden I had some difficulty in finding it. The Austrian Copper I could get, but not the Yellow. At last I found it, and I hope that I have got it true. Of other single Roses what I have not bloomed before were Paul's Single White and Single Crimson. I have planted these for a pillar, and think the White exceedingly pretty and well suited for this purpose. I do not think so well of the Crimson.

Of the Polyantha Roses we have to note a very pleasing addition in Perle d'Or and Mignonette; they are useful both in the garden and as pot Roses. Some of the latter exhibited by Messrs. Paul & Son last year in pots were greatly admired. The former is an exceedingly pretty little Rose, nankeen yellow, with orange centre, not unlike the colouring of William Allen Richardson when well coloured; it is very dwarf and interesting. One would hardly have expected that a cross of Tea blood with the rampant single-flowered Japanese Rose would have

produced such pretty little dwarf bushes and flowers. Yet another cross is announced, Madame Geo. Bruant, said to be a hybrid between R. rugusa and Sombreuil. I should say, from the bloom obligingly sent me by Messrs. Cooling & Son of Bath, that Rugosa has not much, if at all, participated in it; it is very pretty and most deliciously sweet scented, but knowing nothing of its parentage I should have said it was a pure Tea. I have not as yet grown it, and probably we shall know something more of it as the season advances.

It was a trying season for new planted Roses, and therefore some of the "species" which I tried to grow did not make much headway. Berberifolia Hardii is clearly not hardy in this part of England, although I have little doubt of it in S. Wales or Cornwall. What it might do on a wall, or under a shelter of a wall, I know not, but it was placed in the sunny part of the rockery, and there succumbed to frost. Others, such as myriacantha, pimpinellifolia, and lævigata, are now established, and I hope will make progress next season.

It would be useful to go through the list of those Roses which have done well and pleased me this year. Some of the older varieties quite hold their own, and notwithstanding the lavish praises which are bestowed on new varieties, it will be some time before many of the older varieties are beaten out of the field. They are praised for a season or two, and then disappear in the background. Have such flowers as Marie Baumann, Duke of Edinburgh, Souvenir d'Elise, Catherine Mermet, or Comtesse de Nadaillac yet been surpassed? but hybridisers are not discouraged, nor, indeed, should they be. There is something yet to be done, we do not so much want monstrous Roses, as Roses of good substance and distinct colouring. If we get size with these well and good, but let not great size be the hybridiser's chief effort.

In this part of England (Kent) we have had an exceptionally severe time, not for the intensity of the frost, but the depth of the snow. There are no signs of pushing buds, and pruning must be late, but let us hope we may be spared those bitter north-easters in May, for we have had enough of them already, and then, I think, we might look forward to a really good Rose year.—D., *Deal*.



CHRYSANTHEMUM SHOWS.

We have received notices of the following fixtures for the Shows of 1888:—

National Chrysanthemum Society, Metropolitan Shows, September 12th and 13th; November 7th and 8th; and January 9th and 10th, 1889.
Provincial Show at Sheffield, November 16th and 17th.
Kingston-on-Thames, November 6th and 7th.
Portsmouth, November 7th, 8th, and 9th.
Teddington, November 8th and 9th.
Crystal Palace, November 9th and 10th.
Ascot, November 13th.
Southend, November 13th.
Devizes, November 13th.
Brighton, November 13th and 14th.
Putney, November 13th and 14th.
Winchester, November 13th and 14th.
Bournemouth, November 14th.
York, November 14th, 15th and 16th.
Market Harborough, November 14th and 15th.
Brixton, November 15th.
Reading, November 15th.
Pembroke, November 15th.
Lindfield (Sussex), November 15th and 16th.
Sheffield and West Riding, November 16th and 17th.
Liverpool, November 20th and 21st.
Birmingham, November 21st and 22nd.
Hull, November 22nd and 23rd.
Pontefract, November 23rd.

A NEW DEPARTURE IN CHRYSANTHEMUMS.

In the first number of the American "Garden and Forest" a distinct variety is figured in photogravure under the name of Mrs. Alpheus Hardy. It is a large, broad floreted, Japanese variety, having spine-like glandular hairs on the backs of its incurving florets. Its appearance is quite unique. It has the asperity of a star fish, and the curled-in look or appearance of Anastatica heirochuntica, or Rose of Jericho, when in its dried up or sunburnt phase of existence. It was sent to Mrs. A. Hardy direct from Japan by a student of the Flowery Land, whom she had befriended when he was on a visit to the United States. A Japanese botanist who saw the flower at Cambridge, Mass., said he had never seen a variety like it in Japan. The spines or glandular hairs are about the eighth of an inch long, and curved like the letter f, their apices being tipped by a globular mass of gum or resin. When the Delaux's and Boucharlets of sunny France get hold of this variety it is likely to become the progenitor of a new race of Japanese flowers.—F. W. B.

CHRYSANTHEMUMS FOR BORDERS.

A long succession of Chrysanthemums can be had in the flower borders as well as in shrubberies. Very frequently old pot plants are saved and either divided and planted or placed out intact. The former practice is preferable of the two, but still better results attend planting out newly struck cuttings. The latter take most readily to their fresh quarters, and the three or four strong branching growths these form are ample. Dibble the cuttings thinly in ordinary Pelargonium boxes or large pans of fine sandy soil, water them through a fine-rose pot, set in gentle heat, keep them rather close and shaded from sunshine till rooted. When struck pinch out the tops and strike these if needed, and when breaking afresh transfer to a cold frame or pit to harden off. By the middle of May capital bushy plants will be ready for the open ground, no potting being necessary. The dwarf early-flowering varieties may be planted in mixed borders, three plants in a group, while those that flower later, and which it is intended to either lift or protect, may be planted 18 inches apart in rows 2 feet apart. All should have well manured freely worked soil to grow in, and if duly staked will succeed surprisingly well. The following Chrysanthemums for the open ground may be selected:—La Petite Marie, both yellow and white varieties, very dwarf, early, and compact; Mrs. Cullingford, white and good; Fiberta, yellow, of branching free-flowering habit and early; Frederick Pélé, crimson, early and very free; Madame Piecol, rosy purple, free-flowering, and early; St. Mary, white, branching, and good; Pompon Toulousain, reddish orange, very free; and Flora, rich yellow. These should commence flowering in July and last till frosts cripple them. Madame C. Desgrange, sulphur white, of sturdy habit, one of the best; G. Wermig, a yellow sport from the last named; Alexander Dufour, violet, of medium height, and very effective; La Vierge, pure white, and valuable; L'Isle des Plaisirs, bright crimson, dwarf, and good; Sœur Melanie, white, sturdy, and very free, one of the best; and Mandarin, creamy white, flower grandly in October, and all are suitable for lifting. These give finer and less formal flowers than do the summer-flowering varieties. James Salter, lilac, a tall, early, and very free-flowering Japanese variety; and Lady Selborne, a beautiful, pure white sport from the latter, frequent, flower grandly in the open, and transplant readily. Mrs. Rundle, Mrs. Dixon, and Mrs. Glenny, struck and grown as just advised, will, if the autumn be mild, yield a wonderful profusion of flowers, and the old variety Julie Lagravère also does well under similar treatment. The later-flowering Japanese, as well as the large-flowering incurved and reflexed varieties, seldom pay for garden culture, but nearly all the Pompons may safely be given a trial.—W. I. M.

ROYAL BOTANIC SOCIETY.

March 21st.

The first Spring Show of the season was held in the Corridor and Conservatory in the Botanic Gardens, Regent's Park, on Wednesday last. Exhibits were numerous, and there was a brilliant display of flowering plants, the beauty of which was considerably heightened by a bright sunny morning.

Bulbs.—Hyacinths as usual contributed largely to the Show, Mr. Douglas winning first honours for twelve plants of the following varieties:—King of the Blues, Czar Peter, Koh-i-Noor, La Grandesse, Vuurbaak, Solfaterre, Lord Derby, Princess Amelia, and Princess Mary of Cambridge, all having substantial spikes and bells. Messrs. Eason and Scott were second and third respectively. In the nurserymen's class Messrs. H. Williams & Sons took the lead with good specimens; Mr. H. R. Wright being second. Mr. Douglas staged the best twelve Tulips in the amateurs' class with well-developed flowers of Proserpine, Ophir d'Or, Keizerskroon, and Joost Van Vondel. Messrs. Scott and Clements followed in the order named. In the nurserymen's class Messrs. Wright and Williams were the exhibitors, and were awarded first and second honours.

Mr. J. Douglas was first with twelve Amaryllises, very strong, several with two scapes and four flowers each. Messrs. Paul & Son, Cheshunt, were second, the plants also being strong, but the flowers were smaller.

Messrs. H. Williams & Sons, Finchley, were first with six pots of Lily of the Valley, well flowered. Mr. J. R. Chard, Stoke Newington, was a close second with grand specimens, and Mr. R. Scott, gardener to Miss Foster, Regent's Park, was third. Crocuses were well shown by Messrs. Scott, Douglas, and Clements, who gained the prizes in that order. Chinese Primulas from Messrs. H. Williams & Sons, W. Kemp, and H. R. Wright winning similar awards.

For twelve pots of bulbous plants, Messrs. Paul & Son were first, showing freely flowered specimens of Iris reticulata and Krelagei, Scilla siberica, Chionodoxas Luciliæ and sardensis, Leucojum carpathicum, Galanthus Sharlocki, and Bulbocodium vernum. The same firm was first with six Roses in pots, the fragrant dark crimson H.P. Comtesse de Camande being very notable. Messrs. Douglas and Eason were the winners with six Deutzias, the first having his usual large specimens.

Azaleas were not very satisfactorily shown, but Mr. H. Eason, gardener to B. Noakes, Esq., Hope Cottage, Higbgate, had the best six in the amateurs' class, dwarf, fairly well flowered plants. The second and third prize plants were of little merit, and one half-dozen ought not to have been exhibited.

Mr. T. S. Ware, Tottenham, had an interesting collection of hardy plants in the open class, Daffodils, Dielytras, Primulas, &c., and was awarded the first prize. The first-prize collection of hardy Primulas from Mr. Douglas comprised pretty examples of the white villosa nivea,

villosa hybrida, marginata, spectabile, pubescens, and several Auriculas. Mr. J. Clements, gardener to L. H. Hicks, Esq., Springfield House, Muswell Hill, was second, showing floribunda, rosca, obconica, verticillata, and erosa. Messrs. John May and Odell were the trade exhibitors of Cyclamens, and Mr. D. Phillips, Slough, and Mr. J. Clements the amateurs, the first in each class having much the finest plants. Messrs. Wright, Williams, and Douglas had good collections of Polyanthus Narcissi.

MISCELLANEOUS.—The non-competing groups were very extensive and beautiful, the following being the principal exhibits. Mr. B. S. Williams, Upper Holloway, Hyacinths, Tulips, Narcissi, Amaryllises, and Azaleas, a very handsome group (large silver medal). Messrs. H. Williams & Sons, Finchley, Hyacinths, Tulips, Daffodils, Lilies of the Valley, &c. (large silver medal). Messrs. J. Veitch & Sons, Chelsea, a group of excellent Hyacinths in all the best varieties (large bronze medal). Mr. J. James, Slough, a collection of extremely fine Cinerarias (large bronze medal). Messrs. Paul & Son, a large group of Roses in pots (large bronze medal). Messrs. W. Cutbush & Son, Highgate, a large and tasteful group of Hyacinths (large bronze medal). Mr. T. S. Ware, Tottenham, Daffodils and Anemone fulgens (certificate). Mr. J. Odell, Hillingdon, a group of Cyclamens (certificate). Messrs. Paul & Son, Cheshunt, a collection of hardy plants. Messrs. Barr & Son, Covent Garden, a collection of Daffodils (certificate). Messrs. H. Lane & Son, Berkhampsted, a collection of Azalea mollis varieties (large bronze medal.

Botanical certificates were awarded for the following :—

Trillium discolor atratum (Veitch & Sons).—A peculiar variety with marbled leaves or bracts, and dark maroon flowers.

Dendrobium nobile Cooksonianum (Mr. Perkins, gardener to the Right Hon. W. H. Smith. Greenlands, Henley-on-Thames).—A fine plant of this variety with eight flowering growths with ten to sixteen flowers each. The variety is described and figured on page 237.

Saxifraga Frederici-Augusta (Paul & Son).—A dwarf tufted species previously certificated at South Kensington and described last week.

Floricultural certificates were awarded for the following :

Rose Lady Alice (Paul & Son).—A Hybrid Perpetual Rose, a light colonred form of Lady Mary Fitzwilliam, very delicately tinted and very beautiful in the half opened state.

Cineraria Favourite (J. James).—A single variety with large blooms of great substance, the florets broad and thick, rich rosy crimson at the tips, and pure white at the base.

Cineraria Maria (J. James).—Single, blooms large, pure white, with a purple centre.

Cineraria Irene (J. James).—Single, an intensely deep purple, florets broad, with a narrow white band at the base.

A few new Hyacinths were shown by Messrs. Veitch & Sons, and though no certificates were awarded they are worthy of note. Sybil is a single variety with purplish mauve flowers in a compact spike, and it is something in the style of Harlequin, but rather darker. Symmetry is also a single variety, salmon red with a darker vein in the centre of each lobe of the corolla. Criterion, single, pale lemon yellow, a delicate colour and rather pretty. Star of Hillegom, double or semi-double, pale blush white, large bells and massive spike. The best of the Hyacinths in the general collections were Queen of the Blues, Czar Peter, blue ; Ida, yellow ; Mont Blanc, white ; General Pelissier, red ; Masterpieee, very dark blue ; Charles Dickens, pink ; General Havelock, dark blue ; Countess of Rosebery, rose ; Electra, pale blue ; La Joyeuse, pink ; Koh-i-noor, semi-double, rose ; Madame Van der Hoop, white, fine ; Prince Albert Victor, red ; Vuurbaak and Linnæus, bright red ; Grand Maitre, blue, large ; King of the Blacks, dark blue ; Snowball, white ; La Franchise, creamy ; Garibaldi, red ; Roi des Belges, bright red. These are all single except where otherwise stated. Of Tulips, Vermilion Brillant, Standard Royal, scarlet and white ; Ophir d'Or, bright yellow ; White Joost Van Vondel, and Canary Bird, pale yellow, were the best.



KITCHEN GARDEN.

PARSNIPS.—Parsnip seed is sometimes sown in February, and very often early in March, but seed sown now in suitable weather will produce as fine roots by October as any sown previously. It is a good time to sow the main crop. Give them deep friable soil, free from anything that would cause the roots to fork. Break the soil up well on the surface previous to sowing, open drills 18 inches apart and 3 inches deep, and sow thinly. Cover with the surrounding soil, and tread it firmly.

EARLY CARROTS.—The French Horn and Short English Horn should be sown now. Where ground was prepared for them some time ago by forking in soot, sand, or lime to prevent grubs doing harm do not fork again, but run the Dutch hoe through the surface when the soil is dry, and sow on the same day. A south border is the best position for them. The drills need only be 1 foot apart and 2 inches deep. Separate the seed well, and avoid thick sowing. A little sand may be placed over the seed before the soil is placed back in the drills, and roll the surface when the soil is so dry as not to stick to the roller.

THE FIRST TURNIPS.—These are always acceptable, but they are very apt to fail if the seed is sown too early. We have sown in February and the early part of March, and the plants all "bolted," but the seed sown now will produce plants that will form roots in May, and that is as early as Turnips are obtainable in most districts. Let the soil be made very rich near the surface ; they will not do much good in poor soil, and a sunny spot suits them admirably. Early Milan is the best for a first crop, and as the roots from this early sowing will not gain any great size much space may be economised by sowing the seed broadcast in a small bed. Many scores of roots may be secured from a bed 4 or 5 yards in length and 4 feet in width, but if in rows in such a small space the return would not be great. Sow thinly and cover slightly.

AUTUMN-SOWN ONIONS.—Onions have not grown much since September. They are short and healthy, and in good trim to avoid seeding prematurely. Thin the plants in the rows to a distance of 5 inches apart, then tread along the side of those remaining, and plant those drawn up elsewhere, giving them very rich ground exposed to the sun, and if placed in rows 10 inches apart and 4 inches between the plants, part of them may be drawn for use in May and June, and plenty allowed to remain to form large bulbs in July and August.

SPRING ONIONS.—The term applies to all Onions sown in spring, and all seed must be sown without delay. Do not make up the old-fashioned cumbersome bed, but apply plenty of manure and soot to a strong quarter of soil ; dig or fork it well in, and then open drills all over it at a distance of 10 inches or 1 foot apart, and sow the seed. Two inches is a good depth to sow, and if a little genial soil can be placed over the seed it will be an advantage. As soon as the seed is covered tread each row firmly, then rake the surface and roll it well. Firm soil always induces the plants to bulb early and well. Pig manure is excellent for Onions.

KIDNEY POTATOES.—These are earlier than any of the round sorts, and should always be planted for a first crop. Like other tender vegetables, Potatoes, if planted too early, are apt to be cut down by late frosts, but those planted during the last week in March are not very likely to suffer. We are now wheeling some manure on a vacant south border, spreading it out and digging it in, and as digging goes on the Potatoes are planted. The rows are 20 inches apart, and the sets are placed 1 foot asunder. The varieties are all of the Ashleaf type, and as these do not make very large top growths, the distance named suits them. Where the manure was dug in some time ago, drills 6 inches deep may now be opened and the sets placed in. Heavy soil does not suit early Potatoes, but light land, if well manured, is admirable. It is a mistake to plant early Potatoes in cold sunless positions.

MAIN CROP PEAS.—Prepare for sowing Peas. Throw out trenches for every row, make them 1 foot deep and not less than this in width. Put a layer of good manure in the bottom and fork it over. Throw a little soil over this when forking is finished, tread the whole firmly down, and then sow the seed. Do not sow in a narrow strip but all over the bottom of the trench, and cover the seed with 4 inches of soil. This arrangement will keep them down from the drought they may experience in July, and while surface-sown Peas would be suffering for want of moisture, these would be as green and fresh as possible.

RADISH.—The early ones in the frames are now ready. They are useful little roots and beautifully crisp. Do not sow again in frames, but place two or three short rows in on a border or any warm corner.

BROAD BEANS.—These have not suffered by the severe weather. Those sown in January are healthy, but several more rows should be sown, and if placed in like the Peas excellent crops will be the result. Two rows, 10 yards or 12 yards in length, will furnish many dishes.

SMALL SEEDS.—Manure and fork over a friable piece of soil, open drills in it at a distance of 10 inches or 1 foot apart, and then sow quantities of Cabbage, Cauliflowers, Leeks, Lettuce, and Brussels Sprouts ; cover them with some good soil, and in a month or so hence they will be ready for transplanting to their bearing quarters.

SPINACH.—The winter Spinach has kept better than we ever saw it. The weeds have been drawn out of the rows, a little soot sprinkled between them, and plenty of leaves will soon be forthcoming to keep up a supply until the spring sowings are ready. A good sowing of the round-seeded Spinach should now be made. Give it a rich surface soil, and keep the drills 1 foot apart.

FRUIT FORCING.

VINES.—*Earliest House.*—The fermenting materials have been removed before the berries begin colouring, retaining however, about a couple of inches thickness as a mulch, and giving the inside borders a thorough soaking with tepid liquid manure. After the Grapes commence colouring ventilate as freely as possible, and gradually reduce the atmospheric moisture. The temperature should be well maintained in the daytime, 70° to 75°, with 10° to 15° rise from sun heat, allowing the temperature to fall through the night to 65° or even 60°.

Vines in Flower.—Keep up a steady circulation of warm rather dry air where Vines are in bloom, maintaining a temperature of 70° to 75° for Muscats, and 5° less for Black Hamburghs, allowing an advance of 10° to 15° from sun heat. All shy-setting varieties should be artificially impregnated, dusting the bunches carefully with a camel's-hair brush, apply pollen from the free-setting varieties to the stigmas of the shy setting sorts. We find it is a good plan to brush over the bunches of the latter first and then apply the pollen with another brush, the brush in both cases being used lightly.

Disbudding.—Do not attempt this until the bunches appear in the points of the shoots, and then it must not be done in a hurry nor a large reduction made at a time, but proceed gradually and rationally so as to give as little check as possible. Retain no more growths than will have

full exposure to light, as crowding the foliage is one of the greatest evils in Vine culture.

Stopping.—It is a safe plan to allow the shoots with fruit to extend three or four leaves beyond the bunches before taking out their points. The laterals from the leaves below the bunches may be rubbed off, or they should be pinched at the first joint, but those above the fruit may be allowed to extend until the available space is fairly furnished, then pinch them and keep them within bounds afterwards by pinching to each joint of growth as made.

Thinning.—A very important operation is this both as regards the bunches and berries. Remove all duplicate bunches before they flower, as it is hardly likely one bunch will set well and the others indifferently. Free-setting varieties may have the berries thinned as soon as they are fairly out of flower, but Muscats and other shy setters should not be thinned until it is seen which berries have been properly fertilised. It is difficult to give precise instructions for thinning, as the berries vary considerably in size in different varieties, and even different individuals of the same variety. Every berry should have room to swell without becoming wedged, and yet leave sufficient berries to ensure the bunch retaining its form when cut.

Watering, Feeding, Mulching.—Vines from the time they are started until the fruit ripens must not lack moisture at the roots. It is extremely difficult to state how often the borders will need watering through the borders being so variable in dimensions, in depth, and in their formation. A narrow border will need watering twice as often as one double the width, assuming the Vines to be equally extended and cropped, and a border of loose material will require water much more frequently than one formed of firm retentive material, consequently the cultivator must be guided by the state of the Vines in relation to their rooting area. The proper plan is to examine the border, and when water is necessary give a thorough supply. Surface dressings of the approved advertised artificials, and supplies of liquid manure may be given. The borders having been dressed at the usual season—*i.e.*, whilst the Vines are at rest, a dressing after the Grapes are set about the completion of the stoning process will help considerably, the material as regards inside borders being at once washed in, or a good soaking with liquid manure at those times and when the fruit commences to colour will assure the berries swelling to a good size. In the case of Vines restricted to narrow borders higher feeding will be necessary, according liquid manure whenever there is need of moisture. Supply a mulching 2 or 3 inches thick of rather lumpy manure, the best being stable manure freed of the straw.

Late Vines.—Syringe Vines that have commenced growth several times a day, endeavouring to secure an even break by closing with a moist atmosphere at 75°, employing fire heat as may be necessary to secure a minimum of 55°. Vigorous young canes do not break evenly. To prevent a rush of sap to the upper part they should be brought into a horizontal position until all the eyes have started, when the canes may be brought up to the wires.

Young Vines.—Those planted last year and cut back to the bottom of the rafter or trellis at the winter pruning must be encouraged by gentle fire heat, so as to allow time for their making and perfecting a good growth. The laterals must have their points pinched out at the first leaf up to a height of 6 feet up the canes, which will cause the buds in the axils of the principal leaves of the canes to form fruit buds and become plump for next season's fruiting, but above that height may be allowed to grow.

Planting Young Vines.—It will require to be done early in April, and where provision has been made for inside and outside borders the Vines should be planted in the former, which will be sufficient for the first year, indeed a 4 to 6 feet width is quite ample in the first instance. The Vines, if cut-backs of last year, may be shaken out and placed in position either before or after they have grown to the extent of a couple of inches, the roots being disentangled and spread out evenly in the border, covering them about 3 inches deep, and watering moderately to settle the soil about them. Vines of the present year's raising will not need to be planted out for some time yet. They are preferably raised in squares of turf, and may be planted when the roots are protruding through the sides, or if in pots they should be turned out before they become root-bound. They will require to have a temperature at planting out suitable to Vines in growth—viz., 65° at night and 70° to 75° by day, with an advance of 10° to 15° with sun, but Vines of last year should be allowed to start unaided, syringing them two or three times a day according to the weather.

Vines for Early Fruiting in Pots.—Cut-backs of last year's raising should receive their final shift. The pots (12 inches in diameter) should be cleaned and efficiently drained, potting firmly in turfy loam, with about a tenth old mortar rubbish and a twentieth of crushed bones. Bottom heat is not necessary, but if they are plunged in it, it should not exceed 80° to 85°, and they must not remain in that so long that the roots enter the plunging material. Keep the house rather close, and if the weather be bright shade for a few days. It is essential that the canes be trained near the glass to insure the solidification of the growth. Pinch the laterals at the first joint, and subsequent growths treat similarly, stopping the lead at about 8 feet.

PLANT HOUSES.

Epacrises.—Some of the earliest plants that flowered and have well started into growth may be repotted if they need it into a slightly larger size. The pots used should be carefully drained, and the soil, good peat and sand, pressed firmly round the old ball. Do not bury the collar of the plant, and disturb the ball no further than is necessary in removing the old drainage from the base. After potting place the plants in a temperature of 50°, and stand them on some moisture-holding material. Syringe the plants twice a day when fine, but water the roots with great care. Plants that have flowered should be cut close back, and be placed in the temperature advised above until they break into fresh growth. Be careful not to crowd those in flower in the conservatory. More harm results to these plants while in such structures from the exclusion of light to the lower part of the plant and careless watering than from any other cause. Keep those required for late flowering as cool as possible, they will be better in a structure with a northern aspect.

Softwooded Ericas.—E. hycmalis and others that flowered early may be repotted without delay in the compost advised for Epacrises. If they have commenced growth they are better in a perfectly cool house. They may be kept rather close for two or three weeks after repotting. If they were well pruned back after flowering the shoots may be tied out towards the rim of the pot. This not only keeps them well furnished at the base, but allows more room to the shoots to properly develope themselves. Stand them where they will have moisture at the base. These will bear the syringe without injury on fine days. Give abundance of air to E. autumnalis, and be careful not to syringe or to allow the air in which they are growing to become stagnant or overcharged with moisture, or they are certain to be attacked with mildew. If mildew appears dew the plants with the syringe and dust the affected parts with sulphur. Keep young stock as cool as possible. Give them plenty of air whenever the weather will allow of this being done. They may be transferred from 3 to 5-inch pots as opportunities offer. The sooner they are done the better, so that they will become established before drying influences surround them.

Hardwooded Varieties.—All young plants that it is intended to grow on should be repotted if they need it. If good sized plants are needed as quickly as possible it is a mistake to allow them to become root-bound before placing them into larger pots. Use good peat with plenty of coarse sand and a little charcoal in lumps, according to the size of the plants. After potting draw any shoots that are taking the lead towards the rim of the pots, which will give the weaker ones a chance and render the work of training afterwards easier. Keep the plants close when drying winds prevail, and be careful that the base upon which they stand be kept moist. Until they are rooting in the new soil bright sunshine may be shaded from them for a few hours during the middle of the day. If they can be stood in a position where shading is not needed all the better. Staking and tying established plants should be brought to a close as rapidly as possible. In tying regulate the growths so that the bloom will be as even as possible over the plants. Keep them perfectly cool, and give air abundantly.

FLOWER GARDEN.

Methods of Propagating Bedding Plants.—Where there are plenty of gentle hotbeds and well heated propagating frames various softwooded plants may be rapidly increased without much difficulty, but these are not by any means generally available. The cuttings require a good bottom heat, and to be kept close and shaded, or they are slow and uncertain in striking root. A well managed Cucumber or Melon frame is most suitable for propagating purposes. Failing any of these conveniences, any number of Iresine, Ageratum, Heliotrope, Verbena, Alternanthera, Abutilon, and Coleus cuttings may be quickly rooted in pans of sand and water set on hot-water pipes. They may be dibbled in as thickly as they will stand in the sand, the water being then poured in and kept renewed constantly. Plenty of roots are soon formed, and the tiny plants may be boxed or potted off as safely as those from cutting pots, taking care, however, to use rather fine and previously warmed soil. Leaves and tops of Echeverias and Sempervivums and Mesembryanthemums must not be kept close and hot, or the majority of them will decay. All these root most surely in sandy soil and set on a sunny shelf or staging in a warm house.

Plants to be Propagated.—Stocky plants of Lobelia speciosa, or selections of the same, divide readily, nearly every little piece being already provided with roots. These may first be dibbled out thickly in boxes and set in gentle heat, and subsequently will develope into fine stocky plants if bedded out in frames. The herbaceous Lobelias stored in pots or boxes are increased by division, plenty of suckers being thrown up from the old crowns. Salvia patens to be started and propagated similarly to Dahlias. The long fleshy roots of Verbena venosa, which have been kept plump in boxes of soil, may be cut into short lengths, two joints to each being sufficient, dibbled thickly into boxes of fine soil, and set in heat to strike. Every little piece will form a plant, the subsequent treatment being the same as that given the ordinary bedding Verbenas. Store plants of Polemonium cæruleum variegatum will now be forming fresh growth. These may be turned out of the pots and divided into as many plants as there are crowns. Pot them singly and keep in cold frames. Centaureas candidissima and ragusina after they have grown in heat for a time will yield a lot of cuttings. Every short side shoot may be taken off, dibbled thinly in well-drained pot or pans filled with sandy soil, and set on a shelf in foreing house. Shade from bright sunshine only, and water carefully. Cineraria maritima and varieties may be propagated in a similar manner or from seed. Tops of Gazania splendens will root in heat, but autumn-struck plants are the least trouble. The same remarks apply to the shrubby Calceolarias. Tops of Zonal and variegated Pelargoniums root most surely when dibbled thinly in well drained 6-inch pots filled with sandy

soil, these being set on the front staging of a vinery not far from the hot-water pipes, and given water very sparingly for a time.

Seeds to be Sown.—Antirrhinums and Pentstemons ought to be sown at once on the surface of pans filled with fine sandy soil and only lightly covered. Set on a gentle hotbed, covered with a square of glass, shaded from bright sunshine, and never allowed to become dry, the seed will soon germinate, and strong plants that will flower this season be eventually obtained. If the first sowing of dwarf Lobelias has failed there is yet time to try again, and Tuberous Begonias sown at this time will flower in the autumn. Golden Feather Pyrethrum ought to be sown in pans, or a box of fine soil, and set on a gentle hotbed. If many small plants are required for carpet bedding, sow the seed in a single or double light frame set on a mild hotbed, thousands of plants requiring no pricking out being thus obtained. Ageratums and Petunias may yet be sown, seedlings of these growing rapidly. Where there are hot sunny banks or borders to be covered, single Petunias should largely be raised for these. Perilla nankinensis may shortly be sown, and also variegated Maize. A few pots of Mignonette and Sweet Peas should also be sown and placed in gentle heat, these duly hardened off and planted out being a long way in advance of any raised in the open. Asters, Stocks, Zinnias, Phlox Drummondi, Dianthuses, Helichrysums, and ornamental Grasses germinate most surely in boxes or pans of fine good soil in heat, the plants being eventually pricked off in other boxes, or in frames. The Grasses may also be sown in the open where they are to grow; Ricinuses and Marigolds need not to be sown yet.

THE BEE-KEEPER.

FERTILE QUEEN INTRODUCTION.

The art of queen introduction may be explained by considering the subject under two heads or cases—*a*, A stock of bees queenless; *b*, A queen subjectless. A stock of bees may become queenless naturally or accidentally, or may be made so artificially. Among the former cases a queen leaves the hive and is then subject to the dangers of being destroyed by birds, insects, or reptiles, or it may miss its way or may not be hived, &c. It may die of old age or disease, or may become a prey to some parasite. The weather, the time of year, or a lack of drones may be against the successful union of the sexes, and so make the queen useless and worthless—merging into so-called fertile workers.

Amongst the reasons for artificially deposing the queen may be mentioned the desire for a queen of greater prolificness, bees of greater amiability or other qualities, or of a different race.

When bees discover that they are queenless (either artificially or naturally so made) they at once set upon the work of raising a queen from any worker larvæ not more than three days old, provided virgin queens are not being raised. If they are rendered queenless while eggs or larvæ less than three days old are in the hive, and they begin to raise queens or build queen cells upon those, it is difficult to queen them, but still this is possible. The queen cells should be allowed to develope until a day or two before the queens are likely to hatch, and should then all be cut out—*i.e.*, the queen cells, and the place brushed over with carbolic acid solution except one cell, upon which the alien queen might be caged after the larvæ or nymph has been destroyed. The queen may be liberated at dusk the next day. This deceives the bees so far as we are able, and causes them to believe their own endeavours have been successful.

There are objections to cages of all kinds—*e.g.*, the queen is confined, and so valuable time for egg-laying is lost; but this must be sacrificed for safety by this plan of introduction. There is an alternative method for those who object to cages, but which from very careful experiments I cannot do otherwise than condemn; in fact, I have not had a single success by it, nor have I known one by any of my friends who are keen and careful observers. It has been denominated "Pond's," sometimes "Simmins'," method; at present I have not time to describe it. I will, however, say, as "Felix" has just been treating on the subject and giving instructions for doing "Pond's" or Simmins'" plan, that last year I experimented with a great number of queens on "Simmins'" (?) system, and in no instance did I find the queen missing on the third day, though fully half were on the tenth day; therefore the system seems a very valuable one for queen dealers, as they can guarantee safe introduction, telling their customers to look on the third day to be sure, and yet prepare to send them another on the fourteenth, by which time she will be lost in some unaccountable manner.

Often these queens will drop a few eggs, and through some peculiar instinct of the bees these eggs are often, if not always, selected to rear the fresh queens from; therefore if the apiarist is busy, and does not happen to frequently examine the hive, taking things for granted, he will have a hybridised daughter reigning, and think she is the one he introduced, if he had not marked her. I might also say I have several times, upon the ninth day, found the poor queen upon an outside comb in a starving condition quite alone. Upon microscopic examination, in a few cases, a very poor condition of the ovaries has presented itself, through neglect by the subjects, although in other cases neither neglect nor disease could be traced. Moreover, I have for some years, upon quite a number of occasions, tried the "Hallamshire law," and having tried this at various periods of the year, I can truly say, provided the instructions are faithfully carried out, a "fertile" queen presented, &c., I have never found this method fail, and I have staked some expensive and pet queens on it. I do not, however, like the idea of withdrawing all the new laid eggs and unsealed brood, which is so very necessary, but "the shortest way across is the longest way round." Nevertheless the Hallamshire law is based on natural lines, while the other cannot be reconciled at all, except that we might consider the alien undergoes such a state of subjection, or fright, and hunger, that she is glad to set to board and lodging, but this we can plainly see drives her into such a gone-back egg-laying condition, that she is, sooner or later, rendered quite unfitted for her motherly duties.

I have been very successful by a method that can be used at any time of the year—I allude to the methed of shaking the bees off their combs in order to get them into the condition of a swarm This exposes brood to the atmosphere unless performed in a manipulating house, but of course eggs could perhaps be fixed in some other hive in the apiary in the case of this method, as also in the Hallamshire law.

With regard to the "Hallamshire law" and the reason why bees prefer eggs or larvæ to raise their own queens rather than accept a strange or alien queen. I have often thought that the force of habit is too often either not recognised or overlooked in dealing with bees. All my experiments in faithfully trying Simmins' proposed method of queen introduction have resulted in the desired queen being "put out of the way" when means of raising a successor were present in the hive, for the bees have invariably raised a queen after their own will. I have carefully marked a few of those queens and have watched the proceedings of the bees most attentively; in fact, I believe Burnens could not have been more attentive, and the finale has each time been the same when eggs or larvæ have been in the hive at the time of introduction, As I have already stated, immediately the cluster is broken to withdraw the queen to substitute an alien the colony is disorganised. I might say I have never placed another queen on the identical spot the original queen was parading at the same moment of removing it. There is no doubt about the bees sometimes suffering the queen to remain within the hive apparently uninjured for a period of time when ushered in upon the Simmins' or Pond's system. This period I have not found to exceed nine or ten days; the poor insect gradually moving from comb to comb to the outside of the cluster, there to perish and be carried out of the hive, though sometimes it is highly probable it may leave the hive alive through lack of homage. I have observed the bees carrying the deceased queen out, and I have seen the queen take refuge from one hive to another. It may be interesting for me to relate that I have on these occasions found alien queens so acting in this latter manner, and that in each case, although the queen entered another hive, a few bees seemed to accompany, but their courage or love seem to falter as they clustered on the handle of a garden spade, on a post, and on a pea stick on each occasion respectively. In each case the alien was balled on the

floorboard, and no doubt would soon have been despatched had I not rescued them. As they receive so little homage they thus quickly present the appearance of non-laying queens and are nearly as capable of flight, as no partly or wholly digest food is offered them (the food bees feed the queen with being about the same as they feed to the brood.)

But why is she superseded? It is no use saying dethroned, as she never had the honour of reigning. Of course I am now speaking about alien queens, and if she was in a stimulated condition eggs would be deposited or dropped, and while there is an egg in the hive (whether queen cells are present or not) the bees will try to develope it into a queen, so that if the first started cells were on the old brood the new queen might destroy them as soon as they become nymphs. Then if she left the hive in disgust or because she got no homage, why of course a daughter of hers takes her place.

I have found by repeated experiments that as soon as a queen is taken out of a seam of bees, operations are commenced to raise a mother bee, and by even placing the queen on to another frame these operations will be commenced. Sometimes she will then be crushed to death. By means of the so-called dummies a number of queen cells may be started and completed in the same time, providing each cluster is separated. I do not mean cork packed or great thick dummies, but perforated zinc. The main point being to place the queen on to a different frame after a few eggs are laid in a few cells. But why is she not destroyed on the new frame? Simply because the whole family is working in natural harmony or habit. It is the habit for the queen to move from frame to frame; but mark well, it is not the habit of the queen to do so until the whole of her business is transacted upon that particular frame, hence the break appearing it is the habit of the bees to perform the operations of raising a new queen. During the summer so many of the brood cells become clogged with stores that the queen wanders from comb to comb, which causes the same thing to be done, hence the swarming fever. The queen gradually becomes of a non-laying appearance and quite capable of flight, owing to the want of the necessary amount of feeding and attention she should have to keep up her former state, and leaves the hive as an insect a little removed above the habit of a worker. If this is not so, for why do they do it? Moreover, no attention is paid to an alien, as it is not her, or the custom, fashion, or habit for queens to be carried from one hive to another.

Now, suppose there are no eggs in the hive, how can the bees raise a queen? They cannot do it. Place a frame containing a few eggs into the hive. Why do the bees recognise this gift? It is their habit to obtain all they can, which we all know perfectly well; and as I have already stated it is their habit to raise a successor from the egg. They therefore gladly commence operations upon this frame of eggs. The same conditions as above being present—*i.e.*, in a disorganised state.

Now, suppose the whole of their eggs and means of raising a new queen are withdrawn, or more naturally their queen dies in a state of nature perhaps there is at no time of the year a hive without eggs in a normal state. If this death happen at a time when fertilisation cannot be obtained the hive died out, or else should a fertile queen, say at mating or swarming time, fly to this hive, the habit is (we challenge anyone to contradict this) that this queen is accepted. Hence the Hallamshire law is on natural and correct lines. I have no hesitation in saying from my own experiments that if the law is truly and faithfully tried it will invariably succeed, excepting those few persons who believe and state their own way is best, and who omit or cannot discern some of the particulars and conditions of the Hallamshire law.—T. Bonner Chambers, F.L.S., *Tref Eglwys Caerows, Mont.*

TRADE CATALOGUE RECEIVED.

Rawlings Bros., Old-Church, Romford, Essex. — *Catalogue of Dahlias.*

TO CORRESPONDENTS

*** All correspondence should be directed either to "The Editor" or to "The Publisher." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Shorthand (*G. H.*).—The work to which you refer can be obtained by ordering through any bookseller in your locality.

Oncidium undulatum (*H. S.*).—Many thanks for flowers and list, but they arrived too late for a note this week. They shall have a paragraph next week.

Stove Climbers (*T. S.*).—Four good plants for training up the roof of a stove are Stephanotis floribunda, Allamanda Hendersoni, Dipladenia Brearleyana, and Bougainvillea glabra.

Chrysanthemums (*R. Crossling*).—We have received the blooms, which will be referred to when your letter is published. It is too late for this week. Your experience is interesting and the results of it satisfactory.

Repotting Orchids (*S. J. A.*).—Letters arriving on Wednesday cannot be satisfactorily answered in the current issue. Do not disturb the plants at present. Information will be given in time to be of service to you.

The Eucharis Mite (*M. C.*).—The bulbs are undoubtedly infested with the mite, and are in an extremely bad condition. The prospect of their recovery is very small, but we shall publish something further on this subject shortly. No doubt low temperature and excessive moisture often cause a very unhealthy condition in these and other heat-loving plants.

Abutilons (*F. M.*).—The dark coloured seedling is a very good one, and well worthy of preservation, but we have seen others quite as dark in colour. If you exhibited well grown plants of the seedling and parent they might receive some notice from the Floral Committee, but you had better write to Mr. A. F. Barron, Royal Horticultural Society, Chiswick, who will advise you where they should be sent. There is a meeting on the 27th inst.

Piping for Heating Greenhouse (*A. B. C.*).—You give no particulars regarding the form or size of the house, which makes a considerable difference in the piping required, and the heating is also considerably influenced by the arrangement of the pipes, also by external surroundings. To heat 2600 cubic feet of air, and maintain it at a greenhouse temperature in all weathers, you would require about 80 feet of 4-inch pipes. N.B.—Your second letter arrived too late for this week.

Megarrhiza californica (*Regular Subscriber*).—The plant is of little horticultural value, but is interesting to a certain extent botanically, chiefly for the enormous root it produces, from which character it derives its generic name, and also the popular title Californian Big-Root. It is of trailing or climbing habit, not unlike the common Bryony, with lobed leaves, inconspicuous flowers, and roundish fruits covered with soft spiny projections. The seeds should be raised under glass, but the plants can be left out of doors if protected in winter.

Insects on Peach (*Shillingstone*).—As your specimens travelled to us in a cold drying wind they reached us in a shrivelled condition. It is preferable to enclose such small insects in a glass tube or tin box, with a little bit of damp moss. The insects appear to be a species of Psylla or Chermes, a pest resembling the Coccus or scale insect in its habits, but of somewhat larger size. There are several kinds not unfrequent in houses, and they are readily killed by tobacco in the form of fumigation or wash. Some have strongly recommended for their destruction a wash containing softsoap and sulphur, applied moderately warm.

Cucumbers and Tomatoes (*Cambridge*).—We have seen excellent crops of Cucumbers and Tomatoes grown in the same house; but not when the latter were much shaded by the former. The plants must have both light and air, or they will not bear good crops. Cucumbers are equally well grown with "little or no ventilation," and with sufficient to enable Tomatoes to prosper; but we are not certain that a person who had been accustomed to either routine exclusively would succeed equally well the first season with the opposite. He might or might not, so much depending on individual aptitude. Perhaps you will proceed the most safely by not materially lowering the temperature for the

Cucumbers, as they proved the more profitable, and let the Tomatoes take their chance, as, if they produce half a crop, this added to a full crop of Cucumbers, would leave you a gainer; but if you by a compromise materially reduce the Cucumber crop, and fail—as you may do—to have a full crop of Tomatoes, you would perhaps lose by the enterprise. Excellent crops of Cucumbers may be had from plants in tubs 2 feet square; but Tomatoes do not require nearly so much root room. It appears you will have one house as liberty in the autumn. Tomatoes grown in pots plunged in the garden would probably set good crops of fruit that might nearly ripen outdoors, and would finish in the house if the plants were removed to it after the Cucumbers ceased to be profitable. See an article on the subject on page 167, in our issue of the 1st inst.

Vines and Plants (*J. E.*).—We are not able to state "the highest temperature to which Vines may be safely exposed during winter and early spring and yet remain in a state of rest," as much of necessity must depend on the hygrometrical state of the atmosphere. With a dry air they will rest for a long time in a temperature between 45° and 50°, but a very dry air is not suitable for several plants, and we do not advise amateurs to run as near the danger line as possible. Ask a nurseryman to supply you with "planting canes," and those of the right size will be sent for that purpose, and treat them as advised last week, planting when they start growth if the border and house are ready for them. The easiest way of raising Lobelias and Petunias is to sow seed in August in a frame, or even outdoors with the pots or boxes shaded from bright sun and protected from heavy rains, wintering the plants either in small pots or transplanted in boxes, on a shelf in a cool house, a vinery at rest answering very well. Half-hardy annuals, such as Stocks, Asters, and various others, may be sown in April, as the temperature of the house must then be warm and genial for the Vines that will have started into growth. Thousands of such plants are spoiled every year by raising them too soon, or keeping them too long in warm houses before they can be placed in cool frames or the open air. Your warm case will no doubt be useful, but if seedlings or rooted cuttings are kept too long in it they will spoil, and a second cooler frame in the house would be very useful for their reception in preparing them for full exposure. Apply the fertiliser at the rate of from 2 ozs. to twice that quantity to the square yard, according to the nature of the soil, as obviously that which is poor needs more than that which is fertile. It may be applied in the same ratio to the soil of Vines in pots when they need extra support, commencing with the smaller dressing, increasing the supply as the advancing growths deprive the soil of its fertility. No rigid rules can be laid down equally applicable under all circumstances, and the action of cultivators must be guided by intelligence.

Gardenias Unhealthy (*A. Black*).—It is very difficult to say exactly what is wrong with your plants from the very limited information afforded us. We can find no trace of insects upon the roots sent, but mealy bug has infested the foliage. If you syringed them towards the close of the year with a strong insecticide the evil may in part be traced to that source. Some years ago we saw a number of Gardenias that had been syringed with a strong solution of petroleum, precaution not having been taken to prevent its entering the soil; the result was that it destroyed the whole of the fibres, consequently the growth was at once arrested. The plants were being forced in a high temperature, and they soon afterwards looked as if they had been grown in semi-darkness. The roots of Gardenias occasionally have a knotted appearance, and this is usually the most conspicuous when the roots have been subjected to extremes of temperature. Too high a temperature in the soil would bring about the swollen condition of the roots, while top growth would be checked. Other causes will also result disastrously. For instance, too liberal supplies of cold water. This is very liable to happen when Gardenias are planted out, especially if they have a good depth of soil in which to root. Evils arising from this cause would scarcely be perceptible during the summer, but generally show before the winter is over. Excessive applications of liquid manure will also destroy the roots. In this case soot water would do no good, but, on the contrary, add to the evil. We presume the peat used was good, but we have known failure arise by a too free use of samples of inferior quality. If the loam contains too great a per-centage of lime Gardenias will not thrive, and we have seen the growth very similar to that sent. You had better shake all the soil from the roots of the plants and pot them in as small size as it is possible to place them in, using plenty of sand in the compost. Start them into growth in a close moist temperature of about 65° at night, with a slight rise by fire heat in the day, allowing the temperature to rise as high as it may from sun heat. Syringe liberally, but apply water sparingly to the roots. If practicable, plunge the pots in a bottom heat of 75°, and cover the surface of the soil and rim of the pot with the plunging material. When they are rooting freely, if you think it desirable, you can prune them as closely as you desire for producing dwarf well-furnished plants.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*B*).—1, Sericographis Ghiesbreghtiana; 2, Cannot be determined from a crushed and flowerless fragment, but it resembles a strong shoot of Fuchsia procumbens. (*A. A.*).—1, Diplacus glutinosus; 3, Eurya latifolia; 4, Begonia fuchsioides. The Ferns cannot be named without spores. (*B. R. T.*).—Your specimens are excellent ones, and we name them with pleasure. 1, Davallia canariensis; 2, Adiantum Williamsi; 3, Asplenium cicutarium; 4, Trichomanes radicans; 5, Selaginella Wildenovi. (*E. R. W.*).—The flower suffered considerably in transit, but it is probably Aspasia lunata. It is not rare, nor is it very common, but a variety known as superba is far superior to it, and consequently more valuable.

COVENT GARDEN MARKET.—March 21st.

Trade has been very dull during the past week, and will continue so till the Easter holidays are over, the only demand being for good well-kept Apples.

FRUIT.

	s.	d.		s.	d.		s.	d.		s.	d.
Apples, ½ sieve	2	6	to	4	6	Oranges, per 100	2	0	to	5	0
Nova Scotia and Canada barrel	10	0		18	0	Pears, dozen	3	0		6	0
Cobs, 100 lbs.	45	0		0	0	Pine Apples, English, per lb.	0	0		0	0
Grapes, per lb.	3	6		5	0	St. Michael Pines, each	3	0		5	0
Lemons, case	10	0		15	0	Strawberries, per oz.	0	9		1	0

VEGETABLES.

	s.	d.		s.	d.		s.	d.		s.	d.
Artichokes, dozen	1	0	to	2	0	Lettuce, dozen	0	9	to	1	3
Asparagus, bundle	8	0		0	0	Mushrooms, punnet	0	6		1	0
Beans, Kidney, per lb.	1	6		0	0	Mustard and Cress, punt.	0	2		0	0
Beet, Red, dozen	1	0		2	0	Onions, bunch	0	3		0	0
Broccoli, bundle	0	0		0	0	Parsley, dozen bunches	2	0		3	0
Brussels Sprouts, ½ sieve	3	6		4	0	Parsnips, dozen	1	0		0	0
Cabbage, dozen	1	6		0	0	Potatoes, per cwt.	4	0		5	0
Capsicums, per 100	1	6		2	0	,, Kidney, per cwt.	4	0		0	0
Carrots, bunch	0	4		0	0	Rhubarb, bundle	0	2		0	0
Cauliflowers, dozen	3	0		4	0	Salsafy, bundle	1	0		1	6
Celery, bundle	1	6		2	0	Scorzonera, bundle	1	6		0	0
Coleworts, doz. bunches	2	0		4	0	Seakale, basket	1	3		1	9
Cucumbers, each	0	6		0	9	Shallots, per lb.	0	3		0	0
Endive, dozen	1	0		2	0	Spinach, bushel	1	6		2	0
Herbs, bunch	0	2		0	0	Tomatoes, per lb.	1	0		1	6
Leeks, bunch	0	3		0	4	Turnips, bunch	0	4		0	6

PLANTS IN POTS.

	s.	d.		s.	d.		s.	d.		s.	d.
Aralia Sieboldi, dozen	6	0	to	12	0	Fuchsia, dozen	0	0	to	0	0
Arum Lilies, dozen	9	0		15	0	Genista, per dozen	6	0		12	0
Arbor vitæ (golden) dozen	6	0		9	0	Hyacinths, dozen	5	0		10	0
Azalea, dozen	24	0		42	0	Hydrangea, dozen	0	0		0	0
Cineraria, dozen	8	0		12	0	Lilies Valley, dozen	18	0		24	0
Cyclamen, dozen	12	0		24	0	Lilium lancifolium, doz.	0	0		0	0
Dielytra, per dozen	12	0		18	0	Marguerite Daisy, dozen	9	0		12	0
Deutzia, per dozen	6	0		9	0	Myrtles, dozen	6	0		12	0
Dracæna terminalis, doz.	30	0		60	0	Narciss, per dozen	8	0		10	0
,, viridis, dozen	12	0		24	0	Palms, in var., each	2	6		21	0
Erica, various, dozen	9	0		18	0	Pelargoniums, dozen	12	0		18	0
,, ventricosa	18	0		24	0	,, scarlet, doz.	6	0		9	0
Euonymus, in var., dozen	6	0		18	0	Poinsettia, dozen	0	0		0	0
Evergreens, in var., dozen	6	0		24	0	Solanum, dozen	9	0		12	0
Ferns, in variety, dozen	4	0		18	0	Spirea japonica, doz.	9	0		15	0
Ficus elastica, each	1	6		7	0	Tulips, dozen pots	6	0		9	0
Foliage Plants, var., each	2	0		10	0						

CUT FLOWERS.

	s.	d.		s.	d.		s.	d.		s.	d.
Abutilons, 12 bunches	3	0	to	6	0	Lilies, White, 12 bunches	0	0	to	0	0
Anemone (Fulgens), 12 bunches	5	0		8	0	,, Orange, 12 bunches	0	0		0	
Anemones (French), 12 bunches	3	0		4	0	Lily of the Valley, 12 sprays	0	6		1	0
Arum Lilies, 12 blooms	4	0		6	0	Mignonette, 12 bunches	3	0		6	0
Azalea, 12 sprays	0	6		1	0	Narciss, white (French) 12 bunches	2	0		4	0
Bouvardias, bunch	0	6		1	0	Narciss, various, 12 bchs	3	0		6	0
Camellias, 12 blooms	1	0		4	0	Pelargoniums, 12 trusses	1	0		1	6
Carnations, 12 blooms	1	0		3	0	,, scarlet, 12 trusses	0	6		0	9
Chrysanthemums, 12 bchs.	0	0		0	0	Primroses, 12 bunches	1	0		3	0
,, 12 blooms	0	0		0	0	Primula (single), bunch	0	4		0	6
Cyclamen, 12 blooms	0	6		1	0	,, (double), bunch	0	9		1	6
Daffodils, Double, 12 bchs	5	0		10	0	Roses, Red, 12 blooms	2	0		6	0
,, Single, 12 bchs	6	0		12	0	,, (indoor), dozen	3	0		4	0
Daisies, 12 bunches	2	0		4	0	,, Tea, dozen	1	6		4	0
Epiphyllum, 12 blooms	0	4		0	5	,, red, dozen (French)	1	6		3	0
Eucharis, dozen	4	0		6	0	,, yellow	3	0		6	0
Gardenias, 12 blooms	5	0		12	0	Snowdrops, 12 bunches	1	0		2	0
Hyacinths, Roman, 12 sprays	0	6		1	0	Spiræa, bunch	0	6		1	0
,, French, 12 bunches	0	9		2	0	Stephanotis, 12 sprays	0	0		0	0
Lapageria, coloured, 12 blooms	1	0		1	6	Tropæolum, 12 bunches	2	0		3	0
Lilium longiflorum, 12 blooms	6	0		9	0	Tuberoses, 12 blooms	2	0		3	0
Marguerites, 12 bunches	2	0		6	0	Tulips, dozen blooms	0	6		1	0
						Violets, 12 bunches	1	0		1	6
						,, (French), bunch	1	6		2	0
						,, (Parme), bunch	2	0		3	0
						White Lilac, per bunch	5	0		6	0



RESULTS—FORMULÆ OF MANURES FOR CROPS.

That the last three years have been unfavourable to the progress of agriculture all will agree, but that they have been unfavourable in much more than a general sense may not be so apparent to an ordinary observer, yet there can be no doubt that

such seasons of drought as we have lately had tend materially to curtail the yield of several of our most important farm crops. Attempts, therefore, at improved methods of culture have in several instances only met with partial success. Results have, however, been sufficiently remarkable to encourage those of us who have been engaged in such important work to persevere, and in so turn the lessons of adversity to account as to insure a full measure of success in the future.

Only a few years ago did Lord Salisbury recommend farmers to "manure their land with brains," or, in other words, to use their wits, and see if they could not so alter and improve their practice in the selection and application of manures as to combine economy with efficiency in a better manner than had hitherto obtained among them. Quite recently another noble lord, who had read some of our notes on the use of chemical manures, owned to us, that while not having such entire faith in them as we had, he was free to admit their high value, and to own how wasteful and extravagant the manufacture of farmyard manure was, and how much of the goodness of every muck heap was known "to steam away, and stream away," in the form of liquid manure running down the roadside, and of volatile gases lost in the air.

It is not sufficient, however, to point this out to the ordinary farmer and to tell him we have a cheap and efficient substitute for his costly manure heap. He requires tangible proof in the form of a heavy crop and profitable balance-sheet, and it was to afford such proof that various associations have been formed in so many parts of the country. Of work so done, none which has come under our notice is more thorough and exhaustive than that of Messrs. F. J. Cooke, G. Taylor, and B. B. Sapwell on their farms under the auspices of the Norfolk Chamber of Agriculture. In a summary of results in the report of the experiments of last year they say, "We may pretty safely claim to have shown that the best and most economical artificial manure for Barley upon a good deal of light soil in Norfolk, from which Turnips have been drawn, is 2 cwts. superphosphate, half to 1 cwt. muriate of potash, and 1 to 2 cwts. of nitrate of soda per acre; or three-quarters to 1½ cwt. sulphate of ammonia in place of the nitrate of soda when its market value is lower per unit of nitrogen. The same dressing is applicable to Barley after a previous white straw crop when such is taken. Where a part only of the Turnips have been so lightly folded with sheep as to suggest further assistance for the Barley, or a heavier folding is made very early in the year, nitrate of soda only, up to 1 cwt. per acre, will probably be the most suitable application. A complete manure for Swedes, and an economical one upon the kind of land mentioned, is 2 to 4 cwt. superphosphate, 1 cwt. sulphate of ammonia, and half cwt. muriate of potash per acre, or with five to six loads of good rotten muck the superphosphate alone would be sufficient. A mixture of bone flour with the superphosphate—half cwt. of the former to 4 cwts. of the latter—will insure better distribution (a matter of very great importance) if nothing else.

For Mangolds we have, so far, found the most economical dressing to be 2 cwts. nitrate of soda, half to be applied at time of drilling seed, and half as a top-dressing after singling the plants, with 3 cwts. common salt—or instead of the salt 1 cwt. muriate of potash—the mixture to be used with, or without, five to ten loads of rotten muck per acre. Without the dung in a good season, 4 cwt. nitrate of soda per acre, sown as before, might be justified in the return, the Mangold being a very gross feeder. As hundreds of pounds are annually spent upon superphosphate for this root, and we have not found it to be wanted upon well-farmed light land, the information on this one point alone should be worth much more than our outlay.

A dressing of 1 cwt. muriate of potash, where it pays at all, will pay well upon Clover or Sainfoin, especially when applied at time of sowing the seed; but there are probably few well farmed soils upon which it is of much service for these crops, and therefore great caution should be exercised in using it.

To an expression of some hesitation in thus offering formulæ based upon the results of two years' experimental investigation, they very wisely add, "We are sure they will be more accurate guides than the chance mixtures of the manufacturer as labelled for special crops, which are for the most part compounded on no principle at all, unless it be one of profit to the vendor." This is entirely in accord with our repeated advice, that all manures should be procured separately and mixed at the farm. Common sense shows such advice to be sound, yet it has been termed "an unwarrantable aspersion on the honesty of manure traders," who, by the way, are generally most positive in their assurances of the virtues of their mixtures. Surely we have a right to be equally positive in only spending money upon manures of our own selection for farms.

(To be continued.)

WORK ON THE HOME FARM.

Work on the land has been much hindered by broken weather, and very little corn sowing has been done at the time of writing this note. This has proved a serious matter where a large staff of labourers is maintained, as the outlay involved in finding work for them is by no means desirable now that every item of expenditure has to be watched so narrowly. But where the chemical manures have been applied to winter corn and pasture good work has been done, for the manure has been dissolved and washed in, and we may now feel certain of a full crop of hay and brisk robust growth in the corn. If when the spring corn can be sown not a day is lost in doing it, germination and growth are certain to follow so quickly that the late sowing may prove advantageous rather than otherwise. Well will it be, therefore, not to press forward the sowing before the land is dry enough to admit of a fine deep tilth being had to thoroughly cover the seed. On light land some sowing has been done, and light land farmers certainly are favoured in being able to work upon the land so soon after the rain is over. The exercise of a little patience will, we hope, enable heavy land farmers to get in the seed in time to ensure a good plant, and with a favourable spring we feel hopeful all will come right. Farmers, however, more than other men have need to be hopeful, patient, and persevering, for however carefully and well their plans may be made they are still very much at the mercy of the weather.

Never was there a year when a forward spring would have been a greater boon to flockmasters than the present one, for many of them are at their wit's end what to do to procure food for the sheep. No Turnips, no Mangold, no grass, a short supply of straw and hay, what are we to do? This is the cry of many a farmer, especially on light land; certainly to purchase food now for the flock is a ruinous proceeding, and yet how many are doing so! Glad are we to be able to report a successful lambing season, and that the lambs are making satisfactory progress. They are now folded upon Turnips with a frequent change for a few hours upon pasture, and although the Swede tops have suffered from frost, white Turnip tops have not done so, and the lambs are able to run forward upon them. Chaff and crushed Oats are given in troughs to the ewes, and the lambs have what lamb food they can consume in a given time, as we altogether object to having any stale or sour food in the troughs. We have only lost one lamb from a stoppage by wool balls, and cautioned the shepherd to remove all loose wool from the ewes' udders to prevent the lambs getting it in their mouths by mistake as they are so apt to do.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE. 1888. March.	9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of soil at 1 foot.	IN THE DAY. Shade Temperature. Max.	IN THE DAY. Shade Temperature. Min.	IN THE DAY. Radiation Temperature. In sun.	IN THE DAY. Radiation Temperature. On grass	Rain
	Inches.	deg	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 11	28.986	47.4	44.1	S.W.	41.0	48.3	43.0	63.4	39.2	0.120
Monday..... 12	29.238	37.0	35.7	N.W.	40.4	42.3	37.0	60.5	34.2	—
Tuesday 13	29.662	32.7	31.8	N.E.	39.8	44.7	31.4	58.4	28.6	0.388
Wednesday.. 14	29.279	44.4	42.8	S.	38.4	51.2	41.2	84.8	31.6	0.322
Thursday.... 15	29.217	41.6	39.9	S.W.	39.2	49.8	37.6	91.6	36.3	0.082
Friday 16	29.392	35.2	33.8	N.	39.3	36.4	34.1	47.7	30.2	0.012
Saturday 17	29.759	31.4	30.1	N.	38.4	37.2	23.7	75.8	23.3	0.010
	29.356	38.5	36.9		39.5	44.3	35.0	68.9	32.9	0.934

REMARKS.

11th.—A violent westerly gale all day, with frequent rain.
12th.—Dull and damp early; cloudy day.
13th.—Cloudy and cold, with one or two slight falls of snow and sleet; heavy fall of snow after 7 P.M.
14th.—Morning generally dull and showery, but with one or two breaks of sunshine; afternoon generally bright till a thunderstorm from 5.5 P.M. to 5.35 P.M.; showery evening.
15th.—Rain early, and dull and damp till 10 A.M., then bright and beautiful.
16th.—Rain in small hours; a little snow at 7.50 A.M.; dull, damp day, with slight showers of fine snow and rain.
17th.—Fine at times, but with frequent sprinkles of snow.

With the exception of one day, a week of unpleasant winter weather, with frequent rain and snow, and very little sunshine. Range of temperature considerable, but the mean nearly up to the average.—G. J. SYMONS.

WATERING.

IF asked to mention the one most important point in the cultivation of plants in pots, I should unhesitatingly say it is watering. It is all-important that the application of water to plants be thoroughly understood, for without a proper knowledge of their requirements in this respect, no amount of attention to other particulars can make their cultivation a success. In too many instances the watering, or a great portion of it, is left to inexperienced hands, and frequently the consequences are too apparent. It cannot be too strongly impressed upon the minds of young men that a thorough knowledge of this very important point in plant culture is absolutely essential to success, and consequently that they cannot pay too much attention to it. The requirements of different plants must be studied, and also the nature of the soil employed in potting, particularly the loam, which varies so much in different localities; so much, in fact, that a change of situations is frequently almost equivalent to beginning to learn afresh the art of watering. In some very heavy soils it is absolutely necessary to let it reach a state of dryness before applying water, that in less retentive soils would be dangerous. Thus it is mistakes are frequently made by young men, after being accustomed to a light soil, having to deal with a heavy one, or *vice versa*.

We frequently read of certain plants said to require an abundance of water, and I always think such statements misleading, especially to inexperienced persons, for few plants require water until the soil is nearly dry. By dry, I mean when there is not sufficient moisture left to prevent the plants flagging, which no plant when growing should ever do; but in heavy soils the nearer they approach that state the better for the plants—at least most plants. There are some exceptions, and amongst them I may mention Ferns during active growth when the pots are filled with roots. Then, with some strong-growing species it is almost impossible to give too much water, and to allow them to get as dry as some plants require to be would insure a check, and probably disfigurement of the fronds, which would be apparent throughout the remainder of the season. A plant of Nephrolepis davallioides furcans we had here last summer, quite 8 feet in diameter, in a 14-inch pot, was supplied with water four times on every hot day, treatment it plainly indicated it liked. Some growers advocate keeping Ferns dry during winter, but I am convinced it is a mistake to do so; others say that because they receive most water in winter when growing in their natural homes, it is proof conclusive they should be kept wetter at this season when grown in pots, but it is as easy to err on the wet side as by keeping them too dry. They should be allowed to get drier than when growing freely, but not so much as to cause them to flag, for that is decidedly injurious to Ferns at any time of the year.

Anthuriums are plants that may safely be said to require an abundance of water, for when potted in suitable material they delight in an almost unlimited amount of moisture both at the roots and in the atmosphere. A compost we find suits these plants well is one-half good peat fibre, the small shaken out, and one-half charcoal and broken crocks, with a surfacing of living sphagnum.

Going to the other extreme, it may with equal certainty be said that Hedaromas, Leschenaultias, Pimelcas, Dracophyllum gracile, and Heaths—especially the hardwooded, slow-growing varieties of the aristata section—with other hardwooded greenhouse plants of a like nature, require more careful attention in this respect than any other kind of plants generally grown. If a Pelargonium or a Fuchsia becomes so dry that it flags, or if it is kept too wet for a time, it will recover, although injury has certainly been done it; but subject any of the above-mentioned plants to such treatment and they are worth but little after; for even if they do not die outright they are ever after miserable-looking objects. It is greatly to be regretted that those good old plants should have been allowed to go out of cultivation as they have, for they are second to no class of plants for beauty when in flower, not even excepting Orchids, with all due respect to those lovely flowers. At the same time they require a greater amount of skill to grow them to perfection, thus rendering good examples doubly valuable in the eyes of the cultivator. But I fear their day is past, principally because of the great demand for cut flowers in most establishments at the present time, for supplying which they are not so well suited as the softwooded, free-flowering plants. Even among these there is a great difference in the amount of water they require, or, rather, in how dry they may be allowed to get before water is applied. Take, for instance, the Heaths. The softwooded varieties, such as hyemalis, Wilmoreana, Cavendishiana, or Ewerianа superba, must never be allowed to get so dry as some other varieties with shorter harder wood absolutely require to be kept, or their growth will be seriously checked.

Azaleas also suffer very much if carelessly watered. I am inclined to think the loss of leaves so frequently noticed in the winter is mainly owing to their getting dry during some period of their growth; not necessarily at or near the time the leaves fall, but probably some time before.

Mignonette is very impatient of too much water at the roots. If wintered in a cold house where in severe frosts the temperature is allowed to fall to 35° at night, very little water is required from November to February. Our plants of this were kept in a cold frame—matted to keep out frost—this winter, and are now growing freely on a shelf in a cool house.

Too much water is often the cause of Primulas decaying at the "collar," though some who lose their plants in this way do not care to acknowledge it. There are few plants that require more careful watering than Primulas, particularly the double varieties that are propagated annually from cuttings, and being rather more tender than the singles are more liable to damp off.

Strawberries in pots, more especially such as are forced very early, will soon show only too plainly the results of negligent watering. The majority of ill-formed fruits (ill-formed through being imperfectly set) are the result either of allowing them to get too dry or keeping them too wet when in flower. Examining them frequently and giving water only to such as absolutely need it is the only way to ensure a good set of perfectly formed fruits, all other conditions being favourable. Another time of the year when Strawberries are apt to be over-watered is after they are shifted from the small pots they are layered in into their largest size. If the balls of soil are wet when potting is done, as they should be, and they can be stood in a shady place and freely syringed every evening, this will generally suffice until about a fortnight after, when they may be removed to more exposed quarters and given a thorough soaking.

It is after being newly potted that plants usually receive most injury, and then it is necessary to exercise the greatest possible care, for if given too much water the new soil becomes sodden and sour before the roots have established themselves in it, whilst on the other hand there is great danger of the ball of old soil becoming so dry that the water given will not penetrate it, the consequence being great injury to the plants, and in many cases death. It is a good plan to frequently syringe newly potted plants, and so prevent their requiring water for as long a time as possible. In the case of plants that must not be syringed, such as Heaths, they should be kept shaded, and the staging and pots syringed to keep a moist

atmosphere until they have somewhat recovered from the check all plants unavoidably sustain in the operation of potting. Hedaromas are particularly liable to die after repotting, and without any apparent reason, but I believe it to be due to imperfect watering. The behaviour of this genus is very unaccountable, the most experienced plantsmen losing them at times, and being quite unable to give any reason for their dying.

The addition of charcoal to potting compost is a practice that cannot be too highly recommended, for it not only keeps the soil open and porous, but also acts as a storehouse for food for the roots, and should be freely used when possible for all plants. In the absence of charcoal broken crocks may be used, and will be found an excellent substitute ; but no matter how good and suitable the soil, no plant can thrive if not properly supplied with water.—C. L., *Bristol.*

ROYAL HORTICULTURAL SOCIETY.

I WAS glad to see the remarks of your correspondent, "A Surrey Amateur," on the unsatisfactory awards made by the Floral Committee. Had I not been unfortunately laid up for the past month I should have brought under the notice of the Council the case of Dendrobium Cooksoni, which I remember well was exhibited by Mr. Cookson about two years ago, when it was not thought worthy of recognition. I notice in your issue last week that this Orchid has since been discovered to be a hybrid between D. nobile and Falconeri, raised at Heathfield House, Gateshead, and was received by Mr. Cookson in exchange. I hope as soon as the new by-laws have been settled by the Council that the question of the advisability of splitting up the Floral Committee into sections with a chairman for each section will be discussed. I hope to see at least an Orchid committee tried, who should not only award first-class certificates for plants of horticultural merit, but they should also grant a botanical certificate to all new plants when exhibited for the first time, and that the functions of the nomenclature committee should be revived, and should again become a prominent feature of the R.H.S. meetings. I hope horticulturists throughout the country will freely express their views on this subject, either in the horticultural press or to me personally. I should like to see definite rules laid down for the guidance of every committee, and that they should send a report to the Council after each meeting of the plants and fruit which they have had under their consideration, and their reasons for giving or withholding certificates and medals.

To your correspondent, "One in the Provinces," I hope hereafter a plan may be devised by which gardeners who become associate members shall on election receive a diploma, and I trust that the day is not far distant when candidates for the diploma will be required to give some satisfactory proof that they are worthy of election ; but I must urge upon all who value the advancement of horticulture throughout the British islands to actively support the Society, not only by exhibiting the wonders of their gardens, but also by becoming members of the Society. Unless the Council is supported and funds forthcoming they will not be in a position to make Chiswick the success that I for one should like to see. At the present time the Council is more or less crippled by want of active support. Many things require to be altered. For this year at least all measures must be of a tentative character. Let horticulturists say what they want and support the Council with funds, so that they may be able to carry their wishes into effect.

It is my impression, in answer to "A Fellow of the Society," that there were two or three exhibitions in the gardens of Finsbury Circus. At one at least Royalty no doubt did give away the prizes, but I think the Rector of Bishopsgate gave them on other occasions. I believe the reason that these exhibitions were given up was not for want of funds, but because certain inhabitants of the Circus objected to them on account of the damage that was done to the croquet and tennis lawns. If my memory serves me right I think that the entrance was either 1d. or 2d. after six o'clock. I believe 3000 or 4000 persons attended each Show. I did trust arrangements could have been made last autumn with the Treasurer of Finsbury Circus by which shows of the R.H.S. might have occasionally been held in the gardens, but unfortunately nothing came of the negotiations. The suggestion about opening the garden at Chiswick when the fruit trees are in flower is worth consideration, but I am afraid that it will not prove so attractive to the public as your correspondent thinks. I think we shall have to advertise the meetings in some popular manner. I have met Fellows of the Society who were not even aware of the day on which the fortnightly Shows are held. I fear that I have trespassed on your space in endeavouring as briefly as possible to show that the Council are not unmindful of the consideration of matters, while they hope to be able to place the Society again in the proud position of the first horticultural society of the world.—A. H. SMEE.

[In this hope we join, and bespeak for the Society the support of those amateurs and professional gardeners who are in a position to become Fellows or Associates under the new regulations. See pp. 215-216 of our issue of the 15th inst.]

EUCHARIS CULTURE.

OF late there have been in the pages of the Journal numerous notes on the Eucharis and its cultivation. As this deservedly favourite flower is grown in almost every garden under almost every possible condition, so must the experience, and consequently opinion, of each individual grower, necessarily differ somewhat from that of others ; hence an interesting controversy, which if conducted amicably can have no other than a happy result, for these records of the experience of practical men are valuable in that they show the good results that may be obtained from widely different methods of treatment.

In my note book I have a few facts appropriate to the subject and of interest to gardeners, which are as follows :—In a garden which I often visit there are several pots of Eucharis grandiflora, which are the healthiest and best I have seen. They are growing in a loamy compost in 12 and 16-inch pots, which are so full of bulbs that they are literally crowding each other out. They are well furnished with dark green leathery leaves, some of which measure upwards of 2 feet from base of petiole to apex of blade, and 8 or 9 inches across the latter. They bloom profusely twice, and sometimes thrice a year. They have not been potted for five or six years, and being very much rootbound require and receive liberal supplies of water. They also each occasionally receive a handful of dry sifted manure from the fowl house. During the winter they are kept in a temperature ranging from 50° to 65°, and throughout the summer months they have no artificial heat whatever. In a great measure they are left to take care of themselves, and they appear to do it very well indeed.

Undoubtedly the Eucharis in course of time, to some extent, adapts itself to the conditions by which it is surrounded—in a word, it makes the best of its opportunities, and thus affords to mankind generally a very salutary lesson. This remark applies to all cultivated plants, whether temperate or tropical, indigenous or exotic.

Apparently some gardeners, in their zeal to grow a plant well, fail to grow it at all. They seem, if one may judge by the way in which they treat the subject, to be imbued with the idea that growing a plant is an operation analogous to making a fire, requiring much personal attention and much fussing and poking about. As a matter of fact, plants are not at all so obstinate as these people would lead anyone to understand. They require neither force nor persuasion, but simply permission to grow—that is to say, they are only too happy to do their own growing, if no insuperable obstacles are placed in their way. It is the work of the cultivator to find out what these obstacles are, and to remove them. When he has done this the plants will grow and thrive without the aid of any exterior assistance.—G. B.

FERTILISATION OF EARLY PEACHES.

IN a recent number of the Journal a correspondent finds he can dispense with artificial fertilisation for his Peaches. I wish I could record a similar experience, for we could avoid a very tedious operation. But I think if artificial means were used more generally for the early houses we should hear far less about light crops. I am afraid the majority of gardeners could not leave the front ventilators open and still command a night temperature of 50° or 55°. During sunny weather the blooms may set well by merely tapping the trees, for the pollen is then light and dry, consequently it will fall well ; but I fear sunny days early in January are more imaginary than real. I have used a camel-hair brush and a rabbit's tail for several years now, and have never seen a light crop follow, but I have seen many failures in the early houses where the tapping system alone had been used. I think it far safer to insure a crop than trust to mere chance. No doubt much depends on the house where the trees are grown in, also the position, for it is an easy matter to keep a light buoyant atmosphere in some houses, while in others during dull weather it is nearly impossible.

Again, the varieties grown must be taken into consideration. The small-flowered varieties, such as Royal George, generally speaking, bear abundance of pollen, while those of the Barrington, or large-flowered section, do not bear nearly so much. It would be interesting to hear if many of your correspondents can trust to the system advocated by "S. T. C.," I fear not. It may be the same

as the Grape-fertilisation question advanced by Mr. S. Castle, who finds artificial fertilisation necessary at West Lynn, though he never had to resort to such means before. Even with carefully fertilising the blooms I cannot echo "S. T. C.'s" words, that he has not noticed a single flower in the early houses that has proved unfertile. —James B. Riding.

CELOSIA PYRAMIDALIS COCCINEA.

This is a very effective plant, the scarlet plumes being most telling when intermixed with other plants having flowers of lighter shades of colour. It may be had in flower all the year round by sowing a pinch of seed early in February, and again in August, in a pan properly crocked and filled to within an inch of the rim with light soil. This should be made firm with the hand before sowing the seed, which must then be covered lightly with fine sandy soil, and watered before being placed in heat to germinate. As soon as the little plants appear, the pan should be placed near the glass, and as soon as the plants are large enough they may be pricked out, 2 inches apart, in well-drained boxes or pans, containing a mixture of three parts of light sandy loam and one of leaf soil, and sifted manure from an old hotbed, with a sprinkling of sharp sand added. These can afterwards be lifted with plenty of soil adhering to their roots, to be potted into 4½-inch pots before they are crowded in the boxes or pans. From this time grow them in heat near the glass until they show flower, keeping them well supplied with water at the roots and over the foliage, otherwise the leaves of the plants become a prey to red spider. If larger plants than can be grown in the 4½-inch pots are desired, some of them should be shifted into 6-inch pots, afterwards transferring the desired number into 7½-inch pots, using the loam in a rougher state for the last two shifts. As the plants increase in size and the weather becomes warmer, admit more air to the plants, and if a slight sprinkling of Beeson's manure be applied over the soil once or twice a week during the growing period before giving water at the roots, it will be advantageous.—H. W. W.

MODE OF SUPPLYING BOTTOM HEAT TO MELONS AND CUCUMBERS.

It is surprising with what tenacity we cling to customs which have nothing to recommend them except that they are "time-honoured." They may have been well adapted for the purposes they were intended to serve when first brought to notice, but have since become quite unsuitable, because of the changes that have taken place in surrounding circumstances or methods of procedure suggested themselves. I cannot help thinking that gardeners have in many cases been working on the wrong principles in their mode of supplying bottom heat for such plants as Cucumbers and Melons that are grown during the winter and early spring months. Before the age when hot-water pipes were brought into general use for supplying bottom and top heat in glass houses the greater part of these plants were grown in dung frames, and the use of fermenting materials for creating the bottom heat was no doubt the best means that could be devised under the existing circumstances. With the advent of hot-water pipes fermenting materials were really no longer necessary for supplying bottom heat, yet in many instances we still find manure and leaves used for that purpose as well as pipes, with the disadvantage that there is no means provided for keeping the heat as regular as was the case with the dung bed, the linings then being frequently renewed kept the mass heating materials at a fairly even temperature. Houses have been built and beds constructed with hot-water pipes for supplying bottom heat. These pipes in some cases are sunk as much as 3 feet from the surface of the bed, and over them manure and leaves are placed and pressed down firmly. This material is then covered with soil, and mounds are formed, on which the plants are in due time set. The strong bottom heat from the fermenting material causes them to make extremely rapid growth for some weeks, but young shoots grown under such conditions are not so short-jointed or so firm in texture as it is desirable they should be, and in the case of Melons not likely to withstand an attack of canker should it once appear. After the plants have grown thus rapidly for a time the bottom heat gradually declines, and as the hot-water pipes cannot be expected to supply a steady heat to such a body of materials there is from that time but little, if any, more bottom than top heat. This state of affairs is often reached just at the time the plants are swelling their fruits and require a brisk heat to enable them to do so quickly, and the want of it causes a check to the fruits, resulting in the skins becoming hard and tough.

The question arises, If hot-water pipes can be depended on for supplying a steady bottom heat why is the manure used at all when the pipes are at command? It entails a great amount of unnecessary labour, and I have come to the conclusion does more harm than good, because it starts the plants into a sappy growth, and often leaves them in a stunted condition. We have discarded the use of fermenting materials in Cucumber and Melon houses altogether, but as the pipes are placed rather low in the bed large pieces of wood are placed over these in such a way as to leave plenty of open spaces between, so that the heat from the pipes may circulate amongst them and reach the soil above. A few spruce branches are placed over the wood, and these are covered with straw to prevent the soil from falling through among the wood, and thereby choking up the passages through which it was intended the heat should circulate. When this is completed there is room for a depth of soil from 1 foot to 15 inches, which we find is sufficient for all purposes. The bottom heat can be regulated at will by the valves attached to the pipes, and a steady and continuous heat is kept up throughout. The plants grown in this way do not make such rapid growth at first, but the shoots are firm and short-jointed, and the leaves thick and leathery. With plants answering the above description Melon growers can look forward with confidence to the results. The same mode of supplying bottom heat we also find very satisfactory for winter Cucumbers, as even fermenting materials are used it is almost impossible to keep up a steady bottom heat unless the plants are grown in pots and fresh materials placed around them at intervals, but we consider the planting-out system decidedly preferable to growing them in pots. Were we constructing new houses for growing Cucumbers and Melons the beds would be made only 18 inches deep from the top of the hot-water pipes, over here would be placed a layer of wood and straw, with the soil added in the usual way. I am inclined to think the plants are grown in this way very little would be heard about the attacks of mildew on Cucumbers in winter. I believe in nine cases out of ten this is caused in the first place by defective bottom heat. Another great advantage under this system is that as there is no sinking of the bed the young shoots can be trained in their proper positions from the first without fear of their being cut by the tying materials, which sometimes happens when manure is placed in the beds, and which often sinks more than was anticipated, causes a great tension between the roots and shoots, and unless noticed in time must result in some of the shoots being cut through or the plants being lifted bodily from the soil.—H. Dunkin.

TUBEROUS BEGONIAS IN POTS.

Having been fairly successful with tuberous Begonias in pots both for exhibition and home use, a few notes at this time of the year may be of service to some persons who are desirous of cultivating this popular greenhouse plant. Many persons fail to grow Begonias well through starting the tubers in too much heat. A steady free growth made in a cool temperature is more conducive to healthy foliage, free growth, and abundance of flowers into the autumn from the same plants. A specimen from 5 feet to 6 feet in diameter of a single-flowered variety—Emperor, for instance, is very handsome during July and August. The large-flowered varieties of the present day do not grow into such large plants as do some of the older and smaller flowered sorts. Perhaps it is as well that they do not, as much space would be needed to house many plants of that size.

The present is a good time to start the tubers into growth. Presuming them to be one, two, or three years old, some perhaps more. We winter ours in sand in the Mushroom house, scarcely ever losing any. One potting of the tubers of the sizes named is enough, nothing is gained by successional shifts during growth. The main point is to know from previous years' growth the habit the plants have, vigorous, medium, and so on, and pot accordingly. For the information of those who do not know, I would say that a tuber 3 inches in diameter should have a 7-inch pot; a 5-inch tuber, which would produce twelve or fourteen growths, should have a 12-inch pot, and so on, according to the size. A plant of the last named size will require abundant supplies of water during the season of growth, and its branches will be what is known as "top heavy" if a suitable pot is not allowed for such a plant.

The compost should be made up with the following materials: —Two parts fibry loam, one part leaf soil, half a part the materials of a spent Mushroom bed, one-quarter part of charcoal broken into about 1 inch pieces, and a free admixture of sand according to the nature of the loam, heavy or light. To each bushel of this compost add a 4-inch potful of finely ground bones. Drain the pots freely. Over the drainage place the roughest parts of the compost, ramming the soil firmly into the pots. Use soil in a rough state, preserving all the fibre of the loam, and cover the tuber about half an inch deep; allowing a good space for water, as copious supplies will be needed during growth. Place the plants in a house having a temperature of about 50°. A vinery just started suits them well,

as the moisture required for the Vines suits the Begonias. No water will be needed for a time until growth commences, only preventing the soil becoming dust dry in the pots. When the growths are 3 inches long remove the plants to the greenhouse, as the heat of the vinery by that time will be too much for the Begonias, and give them a place as near the glass as possible. In fine weather syringe the plants in the afternoon of each day and give water to the roots as required, increasing the supply as growth proceeds. When the pots are filled with roots alternate supplies of weak liquid manure is of immense advantage. Drainiugs from the farmyard are as good as anything. Do not pinch the points of the shoots, but allow them to grow away freely. Tie out the branches as growth proceeds, allowing space for a free development of their leaves.—E. M.



ORCHIDS IN FLOWER AT CAMBERWELL.

We have been obliged with the following list of Orchids flowering in Mr. R. I. Measures' collection, Cambridge Lodge, during the present month, a large proportion of which are still in flower.

Cœlogyne cristata varieties—alba, Trentham var., Chatsworth var., Lemoniana.

Vandas—tricolor, tricolor insignis and tricolor superba, and cristata.

Cypripediums—insigne, insigne sylhetense, insigne Forstermanni, Lindleyanum, pardinum, Boxalli, Harrisianum, villosum, villosum Warneri, villosum aureum, villosum nanum, Argus, Dauthieri, Dauthieri superba, Sedeni, Sedeni porphyreum, barbatum, barbatum pulcherrimum, chlonoreurum, Brayeanum, Williamsi, Warneri, vernixium, Amesianum, Haynaldianum, Hartwegi, Sedeni candidulum, callosum, Roezli, longifolium, euryandrum, and Spicerianum.

Trichopilias suavis and suavis alba.

Lælia præstans.

Masdevallias—iguea, Chelsoni, Shuttleworthi, and Shuttleworthi xanthocorys.

Dendrochilum glumaceum.

Rodriguezia planicaulis.

Cœlogyne elata.

Cattleyas—amethystoglossa, Trianæ (150 flowers), chocoensis and bogotensis.

Dendrobiums—Leechianum, Domini, nobile, Ainsworthi, Wardianum, crassinode, crassinode Barberianum.

Oncidium undulatum.

Restrepia antennifera.

Phalænopsis Schilleriana.

Lælia harpophylla.

Odontoglossums—Roezli, Roezli album, cristatum, Rossi majus, Wallisi, odoratum, gloriosum, Andersonianum, Alexandræ, Wilckeanum, Halli leucoglossum, and triumphans.

ORCHIDS AT LEEDS.

T. A. Titley, Esq., Oakley House, Gledhow, near Leeds, may be congratulated on being the fortunate possessor of the most extensive and complete collection of Orchids in this district, and their remarkably healthy appearance is highly creditable to his efficient head gardener, Mr. Massey. Six span-roofed structures are devoted to their culture, and although not lofty and imposing ones, are admirably adapted for the purpose, the stages being well filled, and from the roof are suspended some hundreds of all the best varieties of this beautiful and interesting class of plants.

It is not my intention in these few notes to particularise the many new and rare pieces of extraordinary value, but shall confine my remarks to the general collection. The Cattleyas are magnificent, a fine specimen of C. Mendelli being noticeable, 3 feet in diameter, on which I counted eleven sheaths. C. Trianæ and C. Percivalliana are represented by forty grand masses now in flower, amongst which are some beautiful varieties with large blooms and excellent colours. There are also good plants of C. Mossiæ, C. crispa, C. labiata, C. Dowiana, C. Warneri, and C. Bowringeana. Lælias are numerous and exceedingly well grown, including L. purpurata, L. præstans, L. anceps alba, L. albida, L. majalis, and L. harpophylla. The Odontoglossum houses contain some hundreds of strong healthy plants, several in flower, amongst which are some remarkably good varieties of O. crispum and O. Rossi majus. Of O. vexillarium there are some fine plants remarkably well grown, also O. Halli, O. gloriosum, O. citrosmum, and O. Roezli. Dendrobiums are represented by well-grown specimens 2 to 3 feet in diameter, including D. densiflorum, D. nobile, D. Wardianum, D. thyrsiflorum, D. Falconeri, D. Findleyanum, and D. crassinode. Of Lycaste Skinneri there are fifty vigorous plants in bloom. A fine plant of Lycaste lanipes has forty-eight flowers. Cœlogyne cristata is in grand masses exceedingly well flowered. Several fine specimens of Cypripedium villosum and Lowi are flowering, also C. Spicerianum, C. Hookeri, C. Stonei, and C. Veitchi with others too numerous to mention. Although Orchids are the special feature at Oakley House, other departments are by no means neglected. Stove, greenhouse, and conservatory are stocked with healthy plants. In the greenhouse is a fine specimen of Lapageria alba covering a greater portion of the roof. Cleanliness and good order prevail throughout, the grounds and kitchen garden being in excellent condition.—L. T.

CULTURE OF DECIDUOUS CALANTHES.

As the season for potting these will very soon be here a few remarks on their culture may be acceptable to some of your readers. As soon as the young growths commence growing, and before any roots are formed, is the time to pot them. The soil used should consist of rough fibrous loam and peat in equal quantities, with some sharp silver sand and charcoal broken fine mixed with it. Some people recommend dried cowdung, but I do not think it necessary if the plants are well fed later on. In potting I prefer placing a single pseudo-bulb in a large 48-size pot, but of course two or three in a large 32-size will do equally as well if desired. After potting the plants should be quite firm in the pots, but the soil must not be pressed too hard in the pots, as in that case the roots will not grow readily. Place the plants in a house with a minimum night temperature of 60°, rising 5° as the season advances. Great care must be taken that the plants are not overwatered at first, as that, besides causing the first roots to damp, makes the soil sour for their successors; but after the pots are well filled with roots copious supplies will be necessary, with the addition of weak liquid manure. As the leaves turn yellow the supply of water must be gradually lessened, and when they are quite dead it must be withheld altogether. The flower spikes commence growth after the leaves are dead, and are supplied with nourishment from the pseudo-bulb. Consequently it matters little how dry the soil is at that period.—En Avant.

SELECT ORCHIDS FOR AMATEURS.

(*Continued from page 236.*)

Lælia. — Handsome aud useful evergreen pseudo-bulbous Orchids, similar in habit to the Cattleyas, and closely related to them. They are distinguished botanically by possessing eight pollinia in two series, Cattleyas having four pollinia in one series. In some the pseudo-bulbs are ovoid and short, but in most they are long, spindle-shaped, or slender, crowned with thick dark green leaves Flowers in racemes, some small (albida), but chiefly large and richly coloured, shades of crimson and purple preponderating in contrast with white (purpurata). Lælias acuminata, albida, anceps, autumnalis and majalis are natives of Mexico, the others are chiefly Brazilian. All require an intermediate temperature and pots, except where otherwise stated. Autumn and winter flowering—*acuminata*, *albida* (cool) *anceps* (many varieties) *autumnalis*, and *Perrini*. Spring and summer flowering.—*elegans*, *harpophylla* (bright orange), *purpurata*, many fine varieties.

Leptotes.—A dwarf evergreen Orchid, small pseudo-bulbs, and narrow, thick, quill-like leaves. Flowers singly, white and purple. Brazil. Pots. Intermediate house. Winter.—*bicolor*.

Limatodes.—Terrestrial plants related to Calanthe. Flowers in racemes, pale or dark rose, very pretty. Trop. Asia. Pots. Peat, leaf soil, and sand. Warm house. Winter.—*rosea*.

Lycaste.—Pseudo-bulbs somewhat conical. Leaves broad and ribbed. Flowers singly from the base, massive, wax-like, durable, white, rose, or crimson, or buff yellowish and purplish. Trop. America. Cool house. Pots, peat. Winter and spring.—*aromatica* *Deppei*, *Harrisoniæ*, and *Skinneri* many varieties, very useful.

Masdevallia.—Evergreen plants without pseudo-bulbs, narrow leaves, flowers singly, white, yellow, scarlet, rose, crimson, and magenta, with brown, almost black, and strange tints in the Chimæra section. Peru and New Grenada. Pots, peat and sphagnum. Cool house, except bella, Chimæra, and Wallisi, which must be grown in baskets suspended from the roof and are better in a slightly warmer house.—*amabilis*, *bella*, *Chimæra*, *Davisi*, *Harryana*, *ignea*, *Lindeni*, *polysticta*, *Shuttleworthi*, *tovarensis*, *Veitchiana*, and *Wallisi*. Some of them are always in flower.

Maxillaria.—Evergreen, with pseudo-bulbs and stem. Flowers

singly, white and purple or white and yellow. Peru. Cool house. Pots. Autumn.—*grandiflora, venusta.*

MESOSPINIDIUM.—Evergreen plant with short pseudo-bulbs, and drooping racemes of small rosy flowers. Peru. Cool house, suspended in baskets. Autumn.—*sanguineum.*

MILTONIA.—Evergreen, small pseudo-bulbs. Flowers singly or two to six on a scape, yellow and brown or white and purple. Brazil. Pots.—*Clowesi*, intermediate; *spectabilis* and *Morcliana*, cool house.

MORMODES.—Deciduous epiphytal Orchids, with peculiar flowers, white or yellowish, spotted brown. Mexico and tropical America. Pots. Intermediate house. They require a marked resting period.—*luxatum eburneum, pardinum.*

NANODES.—Epiphytal, dwarf, very interesting, and distinct. Flowers with yellowish sepals and petals, and large purplish deeply fringed lip. South American Andes. Cool house. Basket.—*Medusæ.*

ODONTOGLOSSUM.—Evergreen Orchids with ovoid or flattened pseudo-bulbs, narrow leaves, and racemes of handsome flowers, white, yellow or rose tinted, spotted and barred with brown. New Grenada and Mexico. Pots. Cool house. Flowering at all seasons, especially winter and spring. Very useful, easily grown, and popular plants.—*Andersonianum, blandum, Cervantesi, cirrhosum, citrosmum*, basket, very little water in winter, flower summer; *cordatum, crispum* (Alexandræ), *Edwardi*, purple, violet fragrance; *gloriosum, grande, Halli, Insleayi leopardinum, maculatum, odoratum, Oerstedti majus, Pescatorei, pulchellum*, very fragrant; *Rossi majus, Sanderianum, triumphans, Uro-Skinneri.* The following require an intermediate house and flower from spring to autumn:—*Phalænopsis, Roezli*, and *vexillarium.*

ONCIDIUM.—Greatly varied evergreen Orchids, with pseudo-bulbs and panicles of showy flowers, principally shades of yellow marked with brown and red. Tropical America. Intermediate house. Pots or baskets, a few on blocks.—*ampliatum majus*, spring and summer; *cheirophorum*, autumn; *concolor*, spring and summer, cool house, basket; *crispum*, block; *cucullatum*, spring, cool house; *dasystyle*, winter, cool house; *flexuosum, Forbesi*, autumn, block, cool house; *Jonesianum*, autumn; *macranthum*, spring and summer, cool house; *Marshallianum*, basket, cool house; *ornithorhynchum*, autumn and winter, basket; *papilio majus* (Butterfly Orchid), basket; *sarcodes*, spring; *sphacelatum, tigrinum, varicosum Rogersi*, winter.

ORCHIS.—Tuberous terrestrial Orchids. Leaves often spotted, dense spikes of small rose and purple flowers. Pots; loam, leaf soil. Cool house, greenhouse, or outdoors. Spring and summer.—*foliosa, maculata superba.*

PAPHINIA.—Small pseudo-bulbous plants, plicate leaves, drooping racemes of strangely coloured flowers. West Indies and tropical America. Pots. Warm house.—*cristata.*

PERISTERIA.—A strong-growing Orchid with large pseudo-bulbs and broad leaves. Flowers in tall racemes, wax-like, white. Trop. America. Pots, loam and leaf soil. Intermediate house. Summer. Requires a good rest after growth.—*elata* (the Dove Plant).

PHAIUS.—Terrestrial Orchids of strong growth, with bold leaves and flowers in racemes, white, yellow, brown, and rosy crimson. Widely distributed in the tropics. Intermediate house. Pots; loam, leaf soil, and manure. Winter and spring. Need a resting period.—*grandifolius.*

PHALÆNOPSIS (Moth Orchids).—Most graceful and beautiful plants, requiring care in culture. Epiphytes without pseudo-bulbs, having broad green or marbled leaves and panicles of handsome white and rosy crimson flowers. India and Malayia. Warm house. Need a regular supply of moisture. Baskets, sphagnum. Winter and spring.—*amabilis, grandiflora, Schilleriana* and *Stuartiana.*

PILUMNA.—Small epiphytes, with pseudo-bulbs and drooping or erect racemes, white, fragrant. Central America. Cool house. Pots. Winter.—*fragrans, nobilis.*

PLEIONE (Indian Crocuses).—Charming little deciduous Orchids with small pseudo-bulbs and bright green leaves. Flowers produced before the leaves, mauve, rose, and crimson. Winter and spring. Himalayas at 4000 to 10,000 feet elevation. Intermediate house. Pots or pans; peat, loam, and sphagnum.—*humilis, lagenaria, maculata præcox, Wallichiana.*

PROMENÆA.—Epiphytal Orchids with small pseudo-bulbs and drooping racemes of flowers, yellow, spotted crimson. Brazil. Intermediate house. Pots; peat. Summer.—*citrina.*

RESTREPIA.—Epiphytal, stems in tufts, few leaves, and small flowers beautifully streaked and dotted, very peculiar and interesting. Trop. America. Cool house. Pots.—*antennifera.*

SACCOLABIUM.—Evergreen plants in the style of Aerides, with stems and distichous leaves. Flowers small in dense racemes from the axils of the leaves, white, spotted rosy purple or crimson, fragrant and very beautiful. Tropical India and Malayia. Warm house. Baskets. Spring and summer.—*ampullaceum, Blumei, giganteum, guttatum.*

SCHOMBURGHIA.—Tall spindle-shaped pseudo-bulbs, and long racemes of rose and white flowers spotted brown. Tropical America. Intermediate house. Baskets or pots. Summer.—*tibicinis.*

SCUTICARIA.—Epiphytal, with drooping quill-like leaves 2 to 4 feet long. Flowers large, yellow spotted with brown. Tropical America. Intermediate house. Baskets.—*steeli.*

SOBRALIA.—Terrestrial, strong-growing, slender stems and plicate leaves. Flowers large, showy; crimson and purple; several from the apex of each stem. Tropical America. Intermediate house. Pots; peat. Summer.—*macrantha.*

SOPHRONITIS.—Evergreen, with small pseudo-bulbs, and dark green leaves. Flowers singly, or a few together, produced freely. Brazil. Cool house. Baskets or blocks. Spring.—*grandiflora*, one of the most useful Orchids grown, flowers scarlet; *violacea*, purplish.

STANHOPEA.—Epiphytes, with ovoid pseudo-bulbs and dark green leaves. Flowers in drooping racemes, produced from base of plants, wax-like, very showy, of short duration, white or yellow spotted and blotched with crimson, orange, and reddish brown. Tropical America. Warm house. Baskets. Summer. Require a good resting period.—*grandiflora, insignis, oculata, tigrina, Wardiana.*

THUNIA.—Deciduous; stems in tufts, terminating in flowers, white, marked with yellow or streaked with crimson. Himalayas. Warm house. Pots; peat and sphagnum. Good rest needed.—*alba, Bensoniæ, Marshalliana.*

TRICHOCENTRUM.—Epiphytes, with small pseudo-bulbs, leaves and flowers, the latter brown and purple. Brazil. Intermediate house. Baskets.—*albo-purpureum.*

TRICHOPILIA.—Evergreen; ovoid pseudo-bulbs, with thick leaves. Scapes from the base; flowers with large funnel-shaped lip, shades of crimson and purple. Tropical America. Intermediate house. Pots. Spring and summer.—*coccinea, suavis, tortilis.*

UROPEDIUM.—A peculiar plant, much like a Cypripedium without the pouched lip. Very interesting. New Grenada. Warm house. Pots; peat, loam, and sand. May.—*Lindeni.*

VANDA.—Handsome plants, with stems like Aerides, and distichous leaves. Flowers in small racemes; blue, white, or yellow, spotted with brown, lip often crimson. Tropical India and Malayia. Warm house. Pots; peat and sphagnum. Flowers at different times.—*cærulea* (blue), *Parishi, suavis, teres, tricolor.*

VANILLA.—Tropical Orchids, with long climbing leafy stems, chiefly interesting for the long pod-like fragrant fruits. Warm house. Pots; peat and sphagnum.—*aromatica.*

ZYGOPETALUM.—Useful evergreen epiphytes; pseudo-bulbs, and terminal racemes of brown, purple, and greenish flowers. Intermediate house. Pots. Winter.—*crinitum, Mackayi, maxillare.*—L. CASTLE.

AURICULAS—A HINT TO BEGINNERS.

THE advantage of having Auriculas in a place where we can get among them at any time has been felt during the past week, when I have been able to overhaul between two and three hundred plants in my small house, while those in frames could not be touched for snow and frost. This overhauling has suggested to me one hint that beginners in the cultivation of this flower may find useful. I say nothing of top-dressing further than this, that the ambition of having bulky plants and large trusses will in time give place to a desire for a healthy stock and refinement of bloom, to neither of which rich top-dressing conduces. A slight addition of a simple mixture of loam, leaf mould, and sand will give a fresher look to the collection, and induce rooting at the collar; beyond this I do not use anything, and even this sparingly. One thing I strongly urge beginners to do at this season, the critical one in Auricula-growing, when many a plant may be lost or saved. Examine carefully the neck of the plant and the stem a little under the surface of the soil. Beyond a seeming tardiness in starting into growth, there may be little to indicate anything wrong. The Auricula disdains to make much show of its ailments, a source of danger to the inexperienced, and a plant may be almost hopelessly gone before such a one detects symptoms quite patent to the practised eye. Should a thin white streak at the collar be observed, or a darkish speck, however small, be seen on the stem, proceed carefully to ascertain the cause. You may possibly discover more than you suspect or desire. With a sharp knife probe cautiously, and scrape away every particle of the brownish wasted bark or stem. Do not squeamishly fear to learn the whole truth, but clean out thoroughly. Then rub the wound liberally with powdered charcoal, add the above top-dressing, not too damp—I sometimes defer this for a

day or two—and you have likely saved the patient's life, if the surgery has given yourself pain. It may surprise you to find how soon, unless the heart of the plant be gone, new roots will be formed. This hint would at one time have been of much value to myself. Unpleasant surprises will be fewer as you come to love the flower as it deserves, and gain fuller knowledge of its habits, and I trust the result of your present investigation will be as gratifying as my own.—A Northern Amateur.

TRITELEIA UNIFLORA IN POTS.

These bulbs are very useful for producing a quantity of white flowers in winter. Their dark green foliage and the number of flowers are always welcome in the dull days. We have many pots of them in a warm greenhouse. They commence flowering about Christmas, and continue until the end of March. The flowers are much liked in a cut state in the house, also for making wreaths and crosses, and they help to add to the beauty of the conservatory or greenhouse associated with other plants on the front stages. We place several bulbs in a 5-inch pot, the soil used being two parts good loam, one of decayed manure and old mortar rubbish. The bulbs are placed about an inch under the soil, which is pressed rather firmly. They should be potted in August. The pots are then placed in a cold pit until the end of October, when they can be removed to the house in which they are to flower. After they have filled their pots with roots liquid manure must be given twice a week. When the flowers have faded remove the plants from the greenhouse to a cold pit till the foliage is dead. The pots can then be placed under the shade of a north wall, or the bulbs may be planted out in such a place till August, when they can be taken up and repotted again.—Geo. Price.

CUTTING AND TASTING FRUIT AT SHOWS.

In reference to this subject Mr. Goodacre at page 82 alludes to the dissatisfaction that was caused at the Crystal Palace early in September last year by the prize in the class for "any other black Grape" not named in the Company's schedule of prizes being awarded to good bunches of Lady Downe's in preference to what your correspondent terms "ordinary" Muscat Hamburghs, but which the majority of Grape growers present at the time considered neat well-finished bunches of that excellent Grape, and deserving first honours. If the "ordinary" character of the Muscat Hamburgh is the production of medium-sized compact bunches consisting of well-coloured berries, then your correspondent's description of the exhibits referred to is quite correct. But the reason I have referred to this particular paragraph in Mr. Goodacre's letter is this—he says "Because I quite agreed with the judges in this case I was advised to 'taste the difference,' but I did not do so, as I condemn the tasting system; it often disfigures exhibits," adding, "and I maintain that unless a man can judge with his eye he is not qualified to judge at all." I quite agree with your correspondent in his condemnation of the practice adopted at some shows of cutting and tasting all kinds of fruits, as in my opinion none but Melons should be tasted; but what I maintain is that Mr. Goodacre and every other practical fruit grower should know very well what the relative qualities (flavour included) of Lady Downe's and Muscat Hamburgh Grapes are the first week in September, or at any other time of the year for that matter, without "tasting" them at the time. The same may be said in the case of judges who may consider it necessary to cut fruits of Royal George and Barrington Peach to enable them to decide the awards by flavour, the specimens of both being in every other respect equal. In short, all practical fruit growers, especially those who officiate as judges at shows, should be sufficiently well acquainted with the relative qualities of all our best and well-established varieties of Grapes, Peaches, Nectarines, Plums, Pears, and Apples, to be able to judge of the merits of examples of the respective kinds when set before them without having to taste them.—H. W. Ward.

THE ORCHARD HOUSE.

[A lecture delivered at Birmingham on the 13th inst. by T. Francis Rivers, Esq.]

The cultivation of Peaches and Nectarines under glass, at one time almost a mystery of gardening, has, within the last few years, made an enormous stride; the horticultural exhibitions all over the country show that a very great development has taken place in spite of the obvious disadvantages of climate. The Peach, as everyone knows, is not indigenous. The habitat is generally assigned to Persia, and it is certain that Peaches are there very abundant and good. Travellers call them exquisite, and maintain that they are better than in England; this I take leave to doubt, animal food is generally so very indifferent in the East that fruit of any kind is welcomed. The climate of Persia, although very hot in summer, is very cold in winter, and this is exactly suited to the Peach, the tree is a rampant grower, and requires an intense and dry cold in winter to induce it to rest. You have, no doubt, seen how easily it is excited to growth by our damp and sometimes warm winters when out of doors. I make these remarks to show that the dry air of an orchard house conduces to the health and well-being of the tree. Until the abolition of the duty on glass, Peach-growing was carried on in houses with moveable sashes glazed with 4-inch squares, and containing as much timber as glass, in a very few years these lights became dim and dingy, the glass itself was of very bad quality, and dust would accumulate in spite of the gardener's care. It is now difficult to understand how good fruit was produced at all under these conditions, and the abolition of the duty was a real relief to the gardener; to the nurseryman desirous that his sorts should be correctly named, it was invaluable, the most extensive nurseries had scarcely wall-room enough to grow the number of trees required for securing scions, and I am afraid there was therefore a good deal of confusion in the names of sorts. As these were limited the evil was, perhaps, not so very great.

About the year 1849, my father, recognising the great value of exactitude in nomenclature, and desiring to grow his own Peaches, constructed a rough glass shed with the new glass, departing entirely from the old system of sliding sashes. The shed was a lean-to, and built with fixed rafters 20 inches apart, with sliding shutters in the back and front. Of course he was told that the trees would burn, that the thorough draught would kill them, and other evils would occur, and he was rather nervous as to the result. Instead of losing his trees they flourished exceedingly, and he soon saw the importance of the dry air and brilliant sunshine. His expectations were more than realised, and he began to extend the culture, without, I think, being at all aware of the importance of the experiment on the future of fruit cultivation in England. After the rough shed, he took counsel with his garden architect, builder, and carpenter, who was at the same time a very intelligent labourer, and built a span-roof on the same principle of fixed rafters and large squares. The first shed was supported by larch poles sawn in half, larch being very cheap at that time, and the span-roof was built in the same fashion, but 20 feet wide, 12 feet in the centre to the ridge pole, and 5 feet high at the sides. This house, from the abundance of light and the thorough ventilation, the ventilators being deal planks on hinges, running the length of the house on both sides, was a still greater success, and began to attract the attention of those cultivators who were disconsolate from the repeated failures of the crops on walls. About this time the parish church was in debt for a considerable sum for restoration, which it was difficult to raise. The parish was then fortunate in having the services of a very energetic curate (the present rector of Fringford), who had watched the experiment with great interest, and who persuaded my father to publish the new system, and give the proceeds of the first edition to the parish. After some hesitation the book was published, and to the author's great astonishment quickly ran through a first edition, a large sum being placed to the credit of the church a year after its publication. It was therefore evident the idea was a happy one, it supplied a want which was felt by most fruit cultivators. No doubt many mistakes were made from want of knowledge, and I may say, because the system was expected to produce fruit without much care; moreover gardeners could not be practically acquainted with it, and it is difficult to learn from a manual, however simply written.

As the original houses were quickly filled with trees, more were required, and it became necessary to extend and somewhat embellish the first idea of a rough orchard house, and to devise a structure which should meet the claims of the kitchen garden and the ornamental fruit house. The next was a span-roof 14 feet at the ridge pole, 24 feet wide, and 100 feet long, and this size, I think, is the most convenient. The length, of course, depends upon the will of the builder, it may be half a mile if he likes. The points to be gained are complete ventilation, and as much sunshine as our climate will afford. A house 100 feet long, of the above width, built in the year 1855, has produced annually for the last twenty-eight years from 3500 to 4000 Peaches and Nectarines, a result which I venture to say would not be given by any wall built at the same cost—namely, £140, the original cost of the house, the harvest of fruit extending from the beginning of July to the first week in October. The work being carried on under shelter the gardener does not reap the plentiful crop of chilblains and the certain future of rheumatism consequent upon nailing and pruning wall trees in the inclement early springs of our climate. I do not, of course, say that the work is carried on without expense, but I maintain that this is amply compensated for by the increased and continual production of fruit, and the great pleasure afforded of the dry atmosphere throughout the winter and spring. I do not know a prettier sight than a well-arranged orchard house when the trees are beginning to show the pink tips of the blossoms, and during the brilliant display of the trees when on bloom, the climate is dry and is free from the moisture inseparable to a conservatory, the trees are one sheet of rose-coloured blooms, and the interest, unlike most flowering trees, is kept up until they have yielded their produce.

Since the permanent establishment of orchard house culture, the question of planted-out trees *versus* potted trees has been often agitated. For my own part, having given the planted-out trees a thorough trial—in fact, I have one house devoted to them—I am convinced that the potted trees are superior. There is great difficulty in restraining trees planted out. The Peach naturally grows very vigorously in a dry climate, and does not submit to root-pruning, in many places the soil is not suitable; but those who object to the constant labour of watering can pursue a modified system with the greatest advantage. This consists in the employment of perforated pots, the perforations, about an inch in diameter, being made about 4 inches from the rim of the pot and carried round; the pot being sunk in the border below the perforations during the summer, roots will push through these holes into the surrounding

soil, and in the autumn when the trees are repotted these roots can be cut off close to the pot without the slightest injury to the tree For growing for market, when quantity and not quality is desired, and. the soil is thoroughly well suited, it is possible that more fruit may be produced by planted-out trees; but of this I am quite sure, that more fruit will be ripe at the same time than it is possible for a private family to consume; it will be therefore necessary to find a ready market for the surplus.

I will, however, take both systems. When I speak of planted-out trees I do not mean trees trained to trellises, but trees planted with untrained heads like Apples, or orchard trees, and allowed to form round heads, the starting point of the branches being about 5 feet from the ground. This will give, in a house 14 feet high in the centre, about 6 feet of space for the head of the tree, which should always be kept about 2 feet or more below the glass. The tendency of the Peach is to excessive growth until checked by the production of fruit. It is therefore necessary to vigorously check those shoots which grow with superabundant vigour. To effect this without disturbing the balance of the tree, and causing a quantity of small shoots, the leaves should be removed from these strong-growing shoots, and a ring made round the bark; when the growth of the lower branches has been established these shoots may be removed altogether. The great point to be settled in pruning standard trees is that they should have flat heads, admitting air and sunshine. There is certain to be fruit enough, as the Peach will soon destroy itself by overbearing if allowed. Another great point in the culture of planted-out trees is that the soil in which they grow should be as hard as a barn door. When my trees were planted, now about thirty years since, this was stirred to the depth of about 2 feet; manure was mixed with it; it was finally trodden down, and so it has remained ever since. It is a hard calcareous clay, solid with the daily tramping of the workmen. Faggots of wood have been taken from the trees, which are roughly pruned as I have described, and which give annually large crops of fruit, and are apparently ready to go on for an indefinite time, as they are in perfect health and vigour. A surface dressing of manure is given to them annually in the spring, and they are dosed with water about once a week, as they get none from the sky. As they are in a house with pot trees they of course come in for the syringing.

Potted trees are, however, the trees for amateurs, the pots being above the surface are always absorbing the dry and warm air of the house, and the trees seem to appreciate this condition. Naturally more attention is required, but I fancy that Cucumbers and Melons require quite as much, and it always seems to me that more labour is wasted on these fruits than would suffice to produce a multitude of Peaches and Nectarines. However, both are necessities of the garden, and I cannot quarrel with them, but I am, as perhaps some may know, a member of the Fruit Committee of the Royal Horticultural Society, and it has been my lot for many days to sit at the meetings of the Committees, to judge of the merits of seedling Melons. In the early morning, nothing but Melon, good and bad, is rather trying to the digestion. My 100-feet house which I am now describing, and the proportions of which I think are best adapted for the supply of fruit for a large family, is now set out for the summer. This work is only just completed. The trees, although far from blooming, are showing their pink petals, it contains of Peaches and Nectarines alone 107 trees, thirty-one pyramids, from 8 to 10 feet high in 18-inch pots, ranged in three rows down the centre of the house, and seventy-six half-standards and bushes on both sides, ranged in two rows alternately, the pots being 3 feet apart. As the half-standards are about 5 feet high, the pots are partly sunk in the ground but not plunged, in order to give room for the heads of the trees. These trees are intended for permanent summer residents, and have, as I have said before, produced nearly 4000 fruit annually for the last twenty-five years, and will, I hope, do the same again this year and for some time yet. Now in addition, the house will hold and protect against frost an equal number of Pears, Plums, and Cherries, all of which can be removed to the open air about the end of May. Up to this time no difficulty will be felt in overcrowding, as the cultivation is identical, and the trees will not have made sufficient growth to incommode each other. I think the advantage of thus utilising an orchard-house will be at once seen, as sometimes there is a general wreck of outdoor fruits, and entire destitution can be thus escaped. I may here remark that the floor of the house is made gay with bulbs and Wallflowers up to the end of April. The effect thus given is very charming, but the introduction of Roses or any shrubs likely to introduce ins et pests must be absolutely and strictly forbidden.

(To be continued.)

FREESIAS.

Few plants have become so popular in such a short time as Freesia refracta alba, and certainly no flower better deserves to be widely known. It is very beautiful, with a delightful scent. I have heard of a few failures with Freesias, but as a rule most persons who grow them succeed fairly well, and the success recorded by "R." goes to prove that their culture is very easy. I have grown a few pots for two seasons, and thought I had done fairly well, but I have not been able to get from twenty to thirty spikes out of eight bulbs. My bulbs, however, are much stronger the second year than they were the first, and I hope to do better in future. There is one important point in connection with Freesias—that is, the long period over which it seems possible to have them in flower. "R." had them in flower at the beginning of the year. I recently saw plants that looked promising to flower about May. We have bloomed ours during March hitherto, but some were potted early in February; they are now starting freely, and if all goes on well they should flower about July or August. It is said Freesias can be had in flower from January to June, but it appears as if we might have them all the year with a little management, but this may not be desirable. In my opinion the winter months are the most suitable in which to have them in flower, and how charming they would be the Easter decoration. F. Leichtlini does not attract so much notice as F. refracta alba, but it is, according to my taste, little inferior. It is a stouter grower, the colour of the flowers creamy white with a tinge of orange red in the lower petals.—E. B.

TECOPHYLÆA CYANOCROCUS.

Messrs. R. Veitch & Son of Exeter exhibited plants of this beautiful Chilian bulbous plant at South Kensington early in March this year, and accompanying them were plants of a variety named Leichtlini (fig. 31). T. cyanocrocus has flowers of a brilliant blue colour, a rich and pure tint that is very rare amongst cultivated plants, and though of



Fig. 31.—Tecophylæa cyanocrocus Leichtlini.

small growth it is a favourite with many who have tried it. A light sandy loam suits it, and it requires to be grown in a cool house or frame. The variety Leichtlini requires similar treatment, and is distinguished by its flowers being white in the centre, edged with blue, and very fragrant. In some favoured districts these bulbs might be grown out of doors, but it is not a safe experiment in most places, and under any circumstances the flowers cannot develope so well as they do under glass.

PEACH TREES CASTING THEIR BUDS.

"J. W. W.," page 169, invites discussion on this subject. I have never had the least trouble with buds falling, and as I have had a full crop of Peaches for the last nine years, a few notes on the management may be of interest to "J. W. W." and other readers of the Journal. The early Peach house here is a lean-to due south, 36 feet long, with an inside border 12 feet wide. There are six trees in the house, three in front trained on a trellis, and three trained on wires to the back wall. To commence with, the house is closed the last week in November, and no fire heat is applied so long as the thermometer keeps at 50°. That temperature is maintained until the trees come in flower, and they are syringed twice every day until the beginning of January when the first flowers open. The temperature is then kept at 55° at night and 60° through the day, allowing 10° more with sun heat. Except when there is frost a little ventilation at the top is on night and day. After the Peaches are set the trees are syringed twice every day at 8 A.M., and a little before one o'clock to allow the foliage to be dried before night. From the time the Peaches are set until stoning is completed a night temperature of from 57° to 58° with 60° by fire heat is kept in the day. The border has a thorough drenching when the house is closed, and 240 gallons every four weeks after, until the

Peaches begin colouring. After the fruits are set I fumigate twice, then syringe twice daily until ripening commences. I give a mulching in April of horse droppings and leaves, which is a great help in keeping the border moist. As a rule, every year I have three times as many Peaches to take off as I leave on; in fact, one year I took off three hundred and then left a heavy crop. My Peaches at the present time are nearly as large as marbles, and more than half will be taken off. The temperature will be kept from 58° to 60° at night until they have stoned, after that 5° higher with fire heat will not hurt when the trees are kept syringed twice daily until ripening commences.

After the crop is gathered I prune the trees at once, as I believe in having the wood as ripe as possible. I think pruning the trees greatly assists in ripening it, by admitting the sun and air among the foliage; the stems are untied, the top and front ventilators and door being thrown open. The trees are thoroughly drenched about 5 P.M. every evening with the garden engine, and twice a week a wineglassful of petroleum is added to each four gallons of water to make sure work of red spider. The border has its usual 240 gallons every four weeks until the leaves fall, then the trees are left to rest until the house is cleaned and closed for another season. I may also state I like a space of 4 inches between the shoots. How often we see Peach trees trained as thickly as possible, which I consider is a great mistake.—G. CLINGING, *Marden Park*.

Notes & Gleanings

—— A SPECIAL general meeting of the ROYAL HORTICULTURAL SOCIETY will be held in the Council Room, No. 111, Victoria Street, S.W., on Tuesday the 10th of April, to take into consideration a code of new by-laws submitted by the Council for the future management of the Society.

—— GHENT EXHIBITION.—Mr. Henry Pearson writes—"I have been in communication with the Manager of L. C. & D. R. Co. respecting the above, and have proposed to him the issuing of cheap circular tickets to enable horticulturists who wish to do so, to visit the bulb grounds of Holland after the Exhibition. He writes 'that his company hope to issue through tickets at a good reduction, fuller particulars will be given later on.'"

—— GARDENERS' ROYAL BENEVOLENT INSTITUTION.—Mr. E. P. Cutler writes:—"I have the pleasure to inform you that the late Lord Northwick has, by his will, left a legacy of £100, free of duty, to this Institution, also that the Right Hon. Joseph Chamberlain, M.P., has appointed Wednesday, the 4th July next, for the anniversary dinner of the Institution, upon which occasion he will take the chair."

—— THE WEATHER.—"D. B." writing from Scotland, remarks that, "The week ending 26th has been very variable and unpleasant. Generally cold E. and N.E. winds have prevailed, with occasional milder intervals. A rapid thaw on the 21st removed a great deal of the snow where not drifted. Frosts of 7° and 8° took place at the beginning of the week. A fall of snow last evening (25th) followed by 11° of frost makes everything as wintry looking as ever."

—— MR. W. WENMAN, The Gardens, Hickleton Hall, Doncaster, writes:—"The weather still keeps very severe. Here in this part of Yorkshire we had 11° of frost on Saturday the 24th. On the 25th we had a fall of snow several inches deep, and on Monday we had 9° of frost. It will be a very late spring if we do not soon have more genial weather. Seed-sowing is at a standstill here." The weather in the south has been somewhat milder, but there has been much cold rain and a little snow. The soil is still in a very unfavourable condition for working or seed-sowing.

—— THE GARDENERS' ORPHAN FUND.—The monthly meeting of the Committee was held on Friday night last. Present—Mr. G. Deal (Chairman), and Messrs. Barron, Bates, Cannell, Dean, Herbst, Laing, Roberts, Roupell, Wright, and Wynne, with Mr. G. Cummins, one of the provincial Secretaries. Since the last meeting the sum of £26 1s. 6d. has been received in donations, and £19 5s. as subscriptions, the number of new contributors being seventy-four. A total of £1503 3s. has been promised in the form of donations and subscriptions, of which £1192 10s. have been received. All amounts due should be transmitted to Mr. Barron at Chiswick as early as convenient, as it is desired to place as many candidates as possible on the fund at the first annual meeting. This will take place at two o'clock on Friday, July 13th, at the Cannon Street Hotel, to be followed by a dinner at five o'clock, at which the President, Sir Julian Goldsmid, Bart., M.P., is expected to be present. This promises to be the great gathering of gardeners and horticulturists of the year, the room engaged being capable of accommodating about 500 persons. Further particulars relating to the event will be published. The following special Committees were appointed to take charge of the arrangements:—1, *Decorations—Flowers*, Messrs. Herbst, Bates, and Head. 2, *Dessert—Fruit*, Messrs. Roberts, Wright, and Laing. 3, *Music*, Messrs. Deal, Richards, and Turner. 4, *Tickets*, Messrs. Richards, Wright, and Wynne. 5, *Election*, Messrs. Deal, Roupell, and Dean. Samples of collecting boxes were examined, and a gross ordered for distribution. There are many applicants for these, and others can be sent to Mr. Barron. A complete list of subscribers was ordered to be printed. The position and prospects of the Fund are considered highly satisfactory, and the greater the support accorded the more extended will be the benefits to the orphan children of gardeners nominated for election.

—— LITERARY IMMORALITY.—It has come to our knowledge that a contributor to the gardening press is in the habit of applying to vendors of garden requisites offering, for a consideration, to commend their wares (that he has not tried) in articles that he hopes to get inserted. The responsible heads of firms of high repute would scorn to be parties to such literary immorality, and we shall not allow any articles to appear in our columns from the writer in question. He is not, we believe, on the staff of any of the gardening papers, though he has contributed to some of them, and very occasionally, though not very recently, to this Journal; but he is now informed that no matter what he may send us in the future it will be rejected.

—— MESSRS. SUTTON & SONS send us a CINERARIA bloom so far above the average of the hundreds that reach us as to be worthy of mention. It was grown by Mr. T. Crosswell, gardener to W. M. Bullivant, Esq., Eden Park, Beckenham. It exceeds 3 inches in diameter, is perfectly circular, the florets, of which there is a double row, overlapping to their extremities, and several of them are three-quarters of an inch in diameter. The colour is purplish crimson with a white centre, this however breaking into the colour a trifle, and in that detracting from the perfectness of the bloom. We are willing to notice any blooms equal or superior to this as encouragement to the raisers and growers, whoever they may be, and as an incentive to others to surpass them.

—— TOMATOES AS BORDER PLANTS.—"J. G." writes—"In June last year I planted a border of my garden at St. Albans with twelve Tomato plants, a large red variety, from one of which I cut 20 lbs. weight of excellent fruit. I bestowed very little care on these plants beyond supporting them with stout stakes, and top-dressing them when they had set their fruit with Thomson's plant manure. Apart from the value of the crop, the plants presented a splendid appearance, loaded as they were with ripe fruit."

—— BRITISH FERNS.—At a recent meeting of the Wakefield Paxton Society, Councillor Milnes, the newly elected President, was in the chair, Mr. H. Oxley occupied the vice-chair, and there was a good attendance of the members. Mr. T. Garnett, who has been appointed co-Secretary with Mr. G. W. Fallas, in the room of Mr. Herbert Chapman, resigned, read the minutes of the annual meeting held on the previous Saturday, and they were adopted. The President also mentioned that at a meeting of the Committee on the previous Wednesday evening it was unanimously resolved to present a student's microscope to Mr. Herbert Chapman as a slight recognition of his valuable services as one of the Honorary Secretaries for the past six years. Mr. L. Twigge, nurseryman, St. John's, read a very interesting paper on "Ferns and their Uses." About a quarter of a century ago Mr. Twigge, whilst residing in Derbyshire, collected and preserved about 800 specimens of British and Exotic Ferns, and he exhibited some of his specimens, and also a couple of pretty little baskets filled with young and healthy Ferns. Mr. Twigge said that August and September are the best times for collectors of Ferns to gather specimens for preserving, and they might be preserved between newspapers as well as by the use of blotting paper. Ferns stand unrivalled as pot plants, and as decorative plants they have no equal. Cut Ferns are now very extensively used in this country, and shiploads of them are sent to England every week

from abroad to supply the wants of the public. Ferns are very useful for growing in cases in dwellings, in hanging baskets in conservatories, and they are also suitable for rockeries. They are easily managed, and he was surprised they are not more extensively grown in this country, because a basket of Ferns will last for years with watering occasionally. Ferns grown in cases are extremely interesting, and afford much pleasure to those who wish to watch their growth. He knew of no better ornament for a home than a miniature fernery. The greatest enemy to Ferns is over-watering; many persons kill Ferns by over-kindness in this respect. Four times a year was quite often enough to water a Fern case. The best time to remove Ferns is February and March, and the best mode of propagating them is from spores. Ferns require a period of rest, particularly old plants, and they might be grown by the poorest amateur as well as by the wealthy in their conservatories and ferneries. A few questions were put to the essayist by Messrs. Alan Willis, G. Parkin, and G. Gill, and after these had been answered Mr. Garnett said he did not see why Ferns should not be cultivated for market purposes in Ireland, Isle of Man, Isle of Wight, and the Channel Islands, instead of importing them by shiploads every week from the Continent. A hearty vote of thanks was given to Mr. Twigge for his paper, and as he had devoted his attention chiefly to British Ferns he was requested to give a paper on Exotic Ferns.

—— CAMBRIDGE BOTANIC GARDENS.—We understand that the estimates for the plant house (£2760) and research laboratory £250) at the Botanical Gardens are accepted, Messrs. Boyd of Paisley being engaged for the former, Mr. Sindall for the latter. Sir Joseph Hooker. Mr. Thiselton Dyer, and several skilled horticulturists have inspected the plans, and they meet with general approval. The proposed Fern house, stove, and Orchid house have a combined area of 2660 square feet, as compared with 2290 square feet, the area of the corresponding present houses.

—— A CLUB FOR COVENT GARDEN MARKET. — The Covent Garden Club was opened last Wednesday evening, March 21st, at the Covent Garden Hotel. The Club has been promoted chiefly for the accommodation of Covent Garden salesmen and growers and senders of produce from the country. Mr. W. Arthur Board is the Hon. Secretary.

—— WE learn that the WILTS HORTICULTURAL SOCIETY will hold the Summer Show on Thursday, August 23rd next, at Salisbury.

—— A CAMELLIA FREAK.—A Boston Amateur writes, "I send a white Camellia bloom showing three centres in a single bud. I have a small plant of this with four more blooms fully out, each bud having two centres; also five buds beginning to open, and each bud seems to have at least two centres. Never having seen a plant like it before, and considering it uncommon, I have sent you a bloom. I have lost its name. I shall be pleased to hear from any of your readers if two or three centres to one bud is of common occurrence on white Camellias." The flower resembles candidissima.

—— THE BIRMINGHAM BOTANICAL AND HORTICULTURAL SOCIETY announce a Rose Show to be held in the Botanic Gardens at Edgbaston on July 12th and 13th this year. Fifteen classes are provided for nurserymen, amateurs, and gardeners; a few are open. The prizes range from £5 for forty-eight blooms to £1 for twelve blooms, with second and third prizes of proportionate amounts. Schedules can be had from Mr. W. B. Latham.

—— AN Exhibition of Chrysanthemums and fruit will be held by the RUGBY AND DISTRICT FLORICULTURAL SOCIETY on November 21st and 22nd in that town. Mr. W. Bryant, 28, North Street, is the Secretary.

—— A CORRESPONDENT informs us that the PRESTON SPRING SHOW, held on Wednesday and Thursday last, "was a good one, and quite equal to any held at Preston before. Hyacinths generally were better than last year. The six Azaleas shown by J. B. Dixon, Esq., were praiseworthy specimens. The groups of miscellaneous plants by Messrs. Payne, Dixon, and Troughton had the most tasteful arrangements in the Show. Mr. Chas. Parker, Preston, was the most successful exhibitor of Orchids, also in the classes for cut flowers, bouquets, &c. Mr. Clark of Ribbleton Hall, among other exhibits, staged an excellent specimen plant of Mignonette. Mr. Frisby, gardener, Worden Hall, was the most successful in fine-foliage plants, also for twenty pots of miscellaneous bulbs. Praise is also due to the last named for his excellent tray of vegetables for this season of the year. Mr. H. Wilding staged splendid Cyclamens, the best variety ever seen at Preston; he also gained the premier award for Primulas. Messrs. Dickson, Brown, & Tait staged the best Hyacinths, not for competition."

—— FRUIT AT THE NEWCASTLE SHOW.—We have received a letter from Mr. J. H. Goodacre, in which he says he has "answered all the questions of 'Old Hand,' in some instances before they were asked;" also that "Mr. Hunter materially supports his arguments against the recognition of Tomatoes as dessert fruit, and coarse fruit generally." Another correspondent signing himself "A Young Hand," congratulates Mr. Goodacre on his courage in challenging the admissibility of fruits unsuitable for dessert tables, and doubts the advisability of providing classes in which only a few growers can compete, while the many are excluded. Mr. Goodacre is entitled to request the two "conscientious, independent, disinterested, and practical gardeners," whose names are published, to give their version of the awards, if he chooses to do so, and with that the controversy must cease. The decision of arbitrators is final, and we shall not allow their verdict to be criticised whatever it may be.

—— THE ENTERTAINMENT TO THE EMPLOYÉS OF THE ROYAL HORTICULTURAL SOCIETY.—The Committee who have this matter in hand have arranged that the employés shall be invited to supper at the "Bolton Hotel," Bolton Garden, High Road, Chiswick, on Friday evening, April 6th, at 7 P.M. Mr. Harry J. Veitch has kindly promised to take the chair. Dinner tickets to visitors will be 5s. each. The hotel is five minutes' walk from Turnham Green Station. Those intending to be present should send their name to Mr. R. Dean, Ealing, the day previous.

HYACINTHS.

A MONTHLY meeting of the Notts Horticultural and Botanical Society was held at the Mechanics' Institute, Nottingham, recently, Mr. N. Pownall (Lenton Hall Gardens) in the chair. There were also present—Messrs. S. Thaeker, Attenborough, Branstone, Baker, Kirk, Ralphs, Holmes, Edmunds, A. Page, E. Steward (Sec.), &c. A paper on the "Hyacinth" was read by Mr. Steward, who hoped that it would be the means of opening up a discussion on what, in his opinion, was really the great question for all gardeners and horticulturists in the present day—namely, how to "crop" their land so that it will pay the occupier and the owner. He should endeavour to show them that money could be made by growing bulbs and other flowering roots as well as it was done in the famous district in Holland. Mr. Steward then traced the history of the Hyacinth from its introduction from Greece in the year 1594. Since then Dutch growers had taken up the growth of this flower, the soil and situation of this district in Holland being particularly favourable for their development. The district in question was 1487 acres in extent, and it was estimated that the imports of bulbs to England annually reached £50,000, the bulb trade being a very extensive one. Few were aware of the amount expended in Hyacinths, bulbs, &c. The London parks required millions. Considering the present bad times their agricultural friends were passing through, he would suggest to them the advisability of turning their attention to the growing of bulbs, as he believed we had every variety of soil and climate suitable to their growth in the adjoining county of Lincoln. In fact, he knew of several growers in the neighbourhood of Spalding who raised many thousands of bulbs of various sorts for the trade in London and elsewhere, and he saw no reason why so much money should be sent into Holland, Germany, and other places for roots which could be grown as well, and in many cases superior, in our own country. Not long since he was shown a head of Snowdrops in one end of a barn near Peterborough, which consisted of about 250,000 roots. This heap was the result of about two acres growth, and had yielded a handsome profit to the owner by the flowers which had been gathered early in the spring, and yet that heap of roots was worth £180. If that was not a paying crop, he should like to know what was. Another item which he desired to mention was the growth of the Lily of Valley crowns. At the present time we imported something like 50,000,000 of this particular variety from Germany and Holland, at a cost of £25,000 per annum. All this money might just as well be saved and kept in our own country. Many thousands grown in Lincolnshire had been tried, and they had proved better in every respect than those grown abroad. He had had some of the finest Gladioli bulbs he had ever seen grown on poor sandy land near the Forest. He also mentioned in support of what could be done in England that there is a hundred acres of ground in Cornwall planted with Narcissus, and nearly the whole of the Scilly Islands are planted with the same flowers of various kinds for the supply of cut flowers for the London and midland markets. These flowers find a ready sale, and are extensively used for home and other decorations. They are without doubt some of the most useful of all cut flowers, on account of the long time they last after being cut.

A discussion followed. Specimens of Hyacinths and other flowers

were exhibited by Mr. James Booth, Chairman of the Society; Mr. R. Alford, Magdala Road, and others.

A cordial vote of thanks was awarded to Mr, Steward for his excellent essay.

SPRING FLOWERS.

THE following are some of the most prominent plants now in flower, the beauty of which cannot be too widely known.

ANEMONE BLANDA (Winter Windflower).—This must not be confounded with A. apennina blanda, which flowers some weeks later, and though a good plant, it cannot be compared with the first-named, either in size or general beauty, although in some respects it appears nearly allied. The flowers are sky-blue, about 2 inches across. It delights in peaty soil, or equal parts of peat and loam, and if a position sheltered from the blustering winds of March can be devoted to it, so much the better. In sheltered gardens this is a lovely plant, and if used as a belting to a bed of Rhododendrons or dwarf-growing American shrubs, it will afford most pleasing results. Every endeavour should be made to increase the stock of this plant, either by seeds or division. I prefer to sow the former as soon as ripe, and if all goes well the seeds will germinate in the following spring. The seedlings in turn should have every attention, and by the end of the growing season will have made good tubers, some of which will have flowered. Those who have had the opportunities to raise this plant in quantity from seeds will know how variable are the plants; and while these, so far as my experience of the plant is concerned, never surpass in beauty that of the original, yet many of them are nearly equal to it, and the worst well deserving every care.

ANEMONE FULGENS.—Another member of this genus, Anemone fulgens, is now striving to flower, and under the following circumstances. In the summer of last year the surplus of a large importation was planted, then, consequent upon their having been dry for a very lengthened period, somewhat shrivelled. At planting time the ground was dust dry, the result being that, apart from swelling considerably, the Anemone made no attempt to grow till the autumn rains began, when the ground was soon strewn with foliage, and towards the end of the year the flowers began to push forth. Could these have been protected from the severe weather of late there would have been a great show of bloom; as it was the bed has not been free from the brilliant scarlet flowers all the winter. I placed a few lights temporarily over them, which protected them from the winds that have damaged so many things of late. This goes to show that, however late these tubers are obtained, we are sure to secure a season of bloom from them, and should this come at the right time, so much the better. I have before planted some very much dried and shrivelled tubers late in spring, and had them in full flower in three months from planting. This is important, as showing what a succession of bloom a series of plantings may bring.

CHIONODOXAS, SCILLAS, PUSCHKINIAS.—Then comes the "Glory of the Snow," Chionodoxa Luciliæ, now glistening with its lovely flowers, so dwarf, so pleasing, while it is hardy and most enduring. I have a bed containing several thousands of its bulbs, planted about 2 inches deep, where they get froze hard as stone, coming through the soil as though nothing had happened, and expanding their blossoms in endless numbers. Scilla bifolia is just a day or two in advance of the last named, and its miniature sprays of blue are very pleasing. Both these plants and also Chionodoxa sardensis have been in flower in cold frames, and are now nearly past. Another beauty among early bulbs is Puschkinia scilloides. One cannot have too much of these things, so truly delightful are they. Here we have a white flower distinctly striped with blue, calculated to delight the most fastidious. It is an acquisition for the rockery or border in the early days of the year.

IRIS RETICULATA.—The intense violet purple of the delightfully fragrant flowers is always admired, and that deservedly, for no other spring bulbous plant can equal it. Choose a warm, sunny, and sheltered nook for this lovely gem, and plant it in very sandy loam. It is quite hardy, and should be in all collections of choice plants. There are several varieties of this plant, notably cyanea and Krelagei, the latter having light purple lilac flowers, quite distinct from all else. The seeds of these should be eagerly sought. All the forms of these netted Iris seed freely, and every care should be taken of them, and sow as soon as gathered. There is hardly a garden where this cannot be grown perfectly, for should the soil in the open ground be clayey, and consequently not suited to them, they may be grown admirably in pots in sandy loam sheltered by a cold frame or handlight.

HEPATICAS.—Another lovely group now in flower is formed by the Hepaticas, the innocent beauty of which cannot be overlooked. We find them represented by many shades of blue, lilac, and mauve, as well as red, pink, both single and double. Then we have two very decided varieties in the single white and the old double blue. All these are peculiarly charming and full of interest in early spring, and should be largely grown by all who have room for a few of the most delightful of spring plants.

DAFFODILS.—Next we come into that multitudinous group of plants, the Daffodils and Narcissus, but these are later than usual.

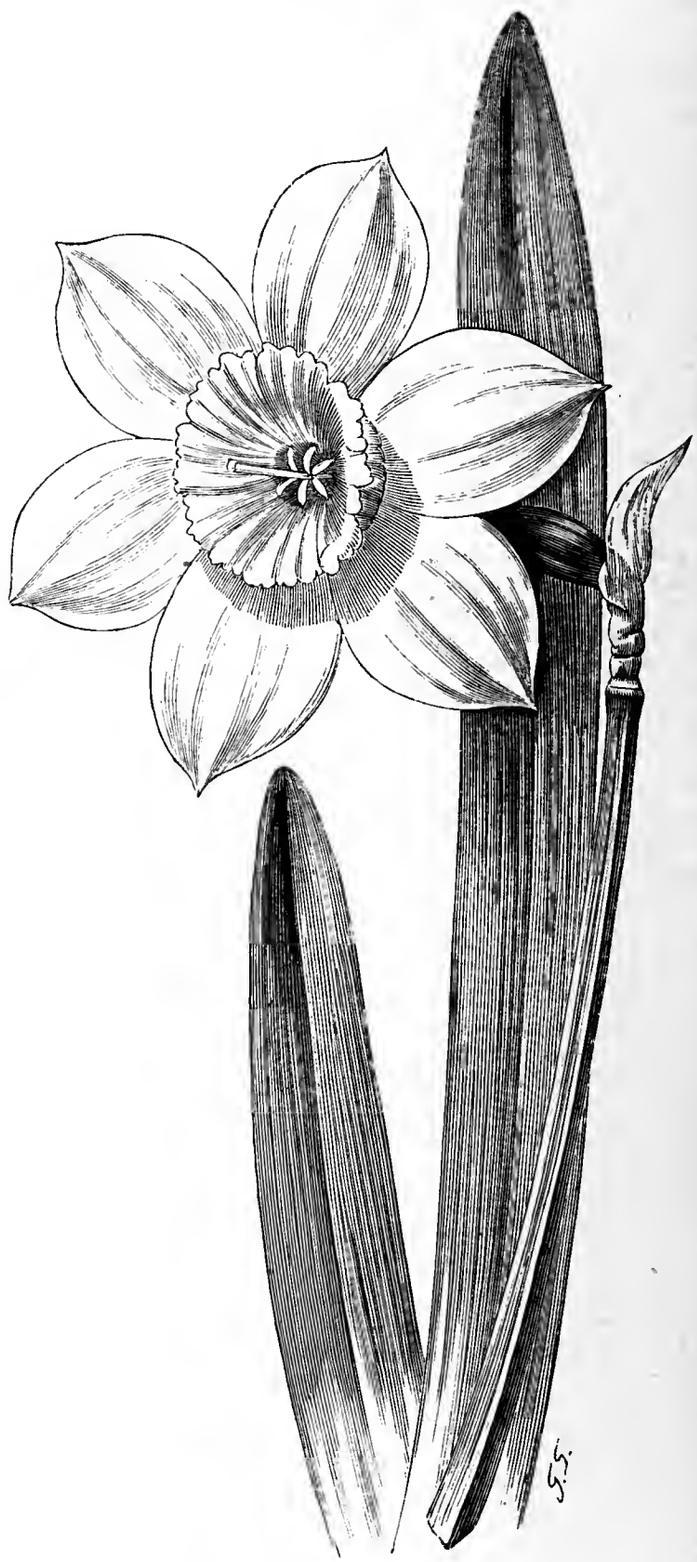


Fig. 12.—Narcissus incomparabilis albus expansus.

Foremost amongst them, however, are the white Hoop Petticoat, N. monophyllus—so innocent and pretty are its satiny flowers—then the tiny little Trumpet Daffodil, N. minimus, just above the surface of the soil. This little one should have a spot where it can receive shelter from harsh winds and pelting rains, or its flowers are liable to be spoiled. Following this comes one of the most delightful of all, I mean Narcissus pallidus præcox, the soft yellow and sulphur of whose flowers are beyond description. I seem the more impressed of this fact as I annually see them develope into flower. There is much more in this lovely Pyrenean Daffodil than may appear at first sight, inasmuch as it opens up a

field for selecting some very distinct and pleasing varieties. In some there are six, seven, and ten segments respectively; in the one having the greater number the cup is bolder and more widely expanded, making a really grand flower. The hardiness of these plants is surprising. The buds are all ready for expanding, some on a south border being in flower, and having stood for several years undisturbed, are now exhibiting their great strength when established and fairly at home. They are planted in maiden loam, and were mulched last autumn early. During the autumn and winter season, when their roots are most active, they have been deluged with liquid manure, and this has evidently assisted them considerably. I believe in giving all the more robust Daffodils, and indeed many other plants too, that are established, a thorough soaking of liquid manure in this way, in preference to giving them crude manures of any kind, though this is not hurtful to many plants on certain soils.

Of innumerable other varieties now flowering under glass, or in early situations out of doors, the two following are especially worthy of note as types of large groups, namely—N. incomparabilis albus expansus (fig. 32), and N. bicolor Empress (fig. 33). The first has well formed flowers and open shallow crown, the perianth white, the latter yellow; the second has bold handsome flowers, the perianth white, the crown golden yellow, very similar to the celebrated N. bicolor Horsefieldi.

Snowdrops.—Snowdrops have been and still are very good, particularly Galanthus Elwesi, so large it seems against the old form G. nivalis, which still has its charms, and its purity and innocence when seen in a mass is not readily outdone; of course, Elwes's Snowdrop in similar quantity would make an astounding show, but there is much to be endured by its failing to grow readily from imported bulbs, which seem to be attacked by a sort of dry rot similar to that affecting Dog's Tooth Violets occasionally; this overcome, however, it will readily establish itself. In planting, I always use an abundance of sharp grit, in fact this seems very acceptable to almost any bulbs, particularly newly imported ones. The lovely Crocus Imperati must close the list of beautiful plants now in flower. It is fast becoming popular, which is a good sign, for it cannot be had in too great a quantity.—J. H. E.

ROYAL HORTICULTURAL SOCIETY.

March 27th.

Much interest had been excited amongst metropolitan horticulturists by the transferrence of this Society's Committee meetings and Shows to the new quarters at Westminster, and it was evident from the display produced that there was a general desire to render the experiment a success. The Drill Hall of the London Scottish Volunteers in James Street, Victoria Street, is a spacious and lofty building, a trifle dark in dull weather, like that of Tuesday last, but this is a defect which will probably not be noticed in brighter weather, in fact it may prove rather an advantage. There is ample room for a large exhibition, and the contributions on the opening day occupied considerable space, as besides the two long stages extending the whole length of the Hall, some groups were placed on the floor at the side, and some tables at both ends were similarly filled. Hyacinths, Daffodils, Cyclamens, Camellias, and Orchids were the leading features, but several miscellaneous collections of considerable interest were also staged, and added materially to the extent and beauty of the exhibition. London nurserymen came forward with great liberality, and amateurs' exhibits, though not so numerous, were varied and attractive in more than an ordinary degree.

By midday there was a large attendance of horticulturists, and the President, Sir Trevor Lawrence, Bart., M.P., in response to the request of several Fellows, made a brief but appropriate speech with reference to the Society's change of residence and prospects. He said that it had become impossible that the Society could remain at South Kensington any longer, as he understood the conservatory would be pulled down shortly. They had endeavoured to select as convenient and suitable a place for the meetings as possible, and he thought they had secured this in the Drill Hall, which was so well filled. The friends of the Society had contributed liberally to the opening show, and he hoped they would continue their assistance through the season, so that the public might be attracted. It was intended to forward the interest of practical horticulture in every way, and to press upon the Government the desirability of including horticulture in the new department for Agriculture and Forestry. He thought horticulturists could teach agriculturists something on profitable cultivation, and if the Royal Horticultural Society could take the leading part in this it would be engaged in a good work; and he concluded by stating that numbers of new Fellows had been elected, and they anticipated many more additions to their ranks, as without this it would be impossible to carry on the work of the Society.

Council Meeting.—At the Council meeting held in the afternoon it was decided to amend the privileges of Fellows paying 1 guinea, by permitting the ticket in future to be transferable.

A report in regard to the proposed Flower Shows in the City was discussed, and it was determined that two should be held, in May and November, if arrangements can be made for suitable positions.

A letter from Sir James Fergusson, Under Secretary of State for Foreign Affairs, to the President of the Royal Horticultural Society, was read, to the following effect:—That the Premier had directed him to lay before the Council of the Royal Horticultural Society a programme relative to an International Horticultural Exhibition to be held at Cologne in August, under the patronage of the Empress Augusta of Germany, and to ask if the Society would inform Lord Salisbury

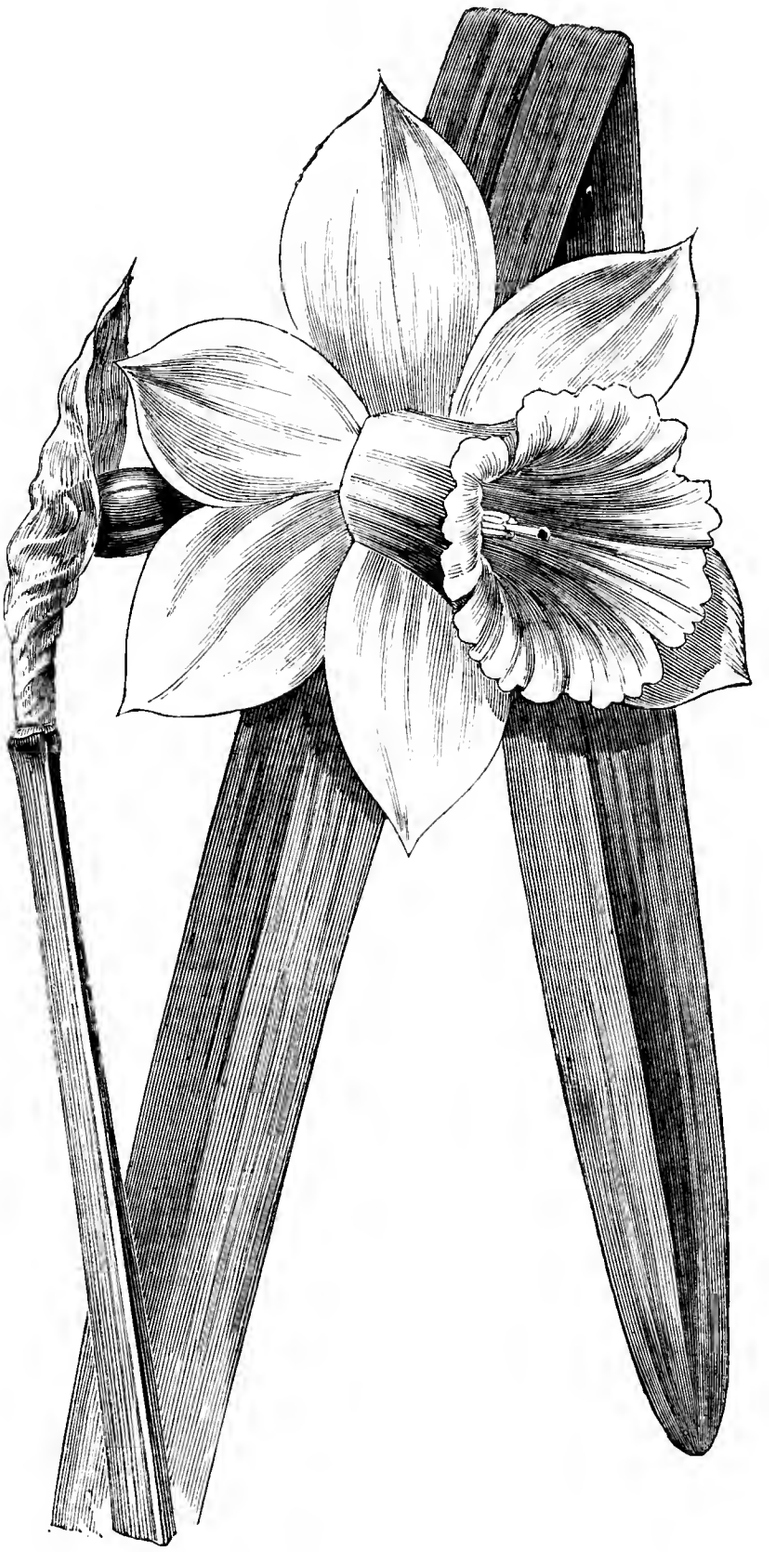


Fig. 33.—Narcissus bicolor Empress.

whether they were willing to act as a Committee on behalf of any British horticulturists and others who may wish to take part in the Exhibition, and send a representative to Cologne. Also requesting the Royal Horticultural Society to give publicity to the proposed Exhibition, and stating that Lord Salisbury would cause the Committee for the Exhibition to be made acquainted with the steps taken by the Royal Horticultural Society if that body decide to take part in it.

It was resolved that Dr. Hogg and Dr. Masters be requested to act as representatives at the proposed Exhibition at Cologne, and that a reply be addressed to Sir James Fergusson to the effect that the Council agreed to comply with Lord Salisbury's wishes.

At general meeting of the Society held the same day, Dr. Masters,

F.R.S., in the chair, the following candidates were duly elected fellows :—W. H. Beaton, Mrs. A. Bevington, F. C. Capel, J. B. Concanon, Richard Cooke, E. H. Davitt, Chas. Dinham, J. Stewart Dismore, W. R. Foster, W. B. Hartland, Matthew Hodgson, Wm. Houghton, Thos. Jones, Wm. Langley, Gustav le Doux, Capt. Maxwell, W. H. Munro, Miss Pearce, J. Cater Price, Reginald Ryley, J. C. M. Veitch, Chas. F. Wintle, Hy. Yool.

FRUIT COMMITTEE.—Present - Harry J. Veitch, Esq., and subsequently Dr. Hogg, in the chair; and Messrs. John Lee, Phillip Crowley, G. T. Miles, W. Marshall, T. J. Saltmarsh, J. Woodbridge, Harrison Weir, Charles Howe, Charles Ross, W. Warren, T. B. Hayward, G. W. Cummins, J. Cheal, R. D. Blackmore, W. Denning, J. Burnett, James Smith, J. Wright, J. Roberts, J. Willard, C. Norman, and Sidney Ford. As will be seen there was a large attendance of members, and several specimens were advanced for inspection. Herr Horvath, jun., sent bunches of three varieties of Grapes grown in the vineyards of Hungary—namely, Royal Museadine, Chasselas Violet, and Beauty of Hungary, all small Grapes, and the berries were much shrivelled, but surprisingly luscious. A vote of thanks was awarded to the exhibitor. In striking contrast to the above were medium-sized bunches of Lady Downe's Grapes sent by Mr. G. Norman from Hatfield; the berries were medium-sized, beautifully finished, and as fresh and firm as in November. The bunches were cut early in January, and had been kept in a fruit-room since. A cultural commendation was unanimously accorded. Mr. Blair sent two bunches of Black Hamburgh Grapes from Trentham Gardens, cut on January 18th; the berries were very large indeed, and only a little shrivelled, and the flavour was excellent. A commendation was worthily awarded both for good culture and good keeping.

W. Roupell, Esq., Harvey Lodge, Roupell Park, S.W., sent a collection of Apples grown in the suburbs of London. They were very fine, well meriting the vote of thanks that was accorded. Messrs. J. R. Pearson and Sons, Chilwell, sent further examples of their Newton Wonder Apple, which was found to maintain its character as a fine and good keeping variety. A seedling Apple was sent by Mr. W. Edwards, gardener to Lord Cadogan, Babraham Gardens, Cambs, medium-sized, firm, and no doubt a useful late sort, but apparently not sufficiently distinct for special notice. A dish of round, firm, good-sized Apples from Mr. Morell, exhibited by Messrs. Veitch, received careful attention. The variety was named Niton House, but was thought to resemble Stirling Castle too closely to warrant a certificate on this occasion. Mr. M. Dunn sent twelve varieties of Apples from Dalkeith. The first examined, named Cortis, was overripe; it is above medium size, and said to be the surest bearer in Aberdeenshire. Arniston, large, closely resembled Reinette de Canada. Golden Pearmain was very large and good, but doubts were expressed as to its being correctly named. The same remarks as to nomenclature apply to fruits sent under the names of Herefordshire Pearmain and Winter Pearmain. Annat Scarlet was considered to be the Graham or Kentish Deux Ans, a serviceable variety. The large Hunthouse was sent as a good northern Apple, as it undoubtedly is, also fine fruits of Beauty of Wilts. A vote of thanks was accorded for the interesting northern consignment. Mr. Austin sent from Witley Court Gardens a late Pear which the Committee thought to be Merveille d'Hiver, or Marvel of Winter, but more specimens were required for satisfactory identification, as when one Pear is cut up and divided amongst twenty persons there is not much for each to examine.

Extensive and valuable collections of Apples, good in size, firm, well coloured, and correctly named, were staged by Messrs. James Veitch and Sons, Chelsea, and Messrs. J. Cheal & Sons, Crawley, Sussex, for which the thanks of the Committee were awarded with acclamation. The meeting was an excellent one for the time of year, a precursor, it is hoped, of others still better to follow.

FLORAL COMMITTEE.—Present - G. F. Wilson, Esq., in the chair; and Messrs. M. T. Masters, J. O'Brien, E. Hill, H. L. Lendy, H. M. Pollett, J. Dominy, H. Ballantine, C. Pilcher, G. Paul, R. Dean, T. Baines, W. Holmes, W. Wildsmith, G. Duffield, W. Bates, H. Herbst, J. Laing, W. Wilks, Shirley Hibberd, B. Wynne, J. Walker, and W. Goldring.

A group of plants and flowers of exceptional interest was contributed from the Royal Gardens, Kew. Several good Acacias were shown from the rich collection in the temperate house, the most distinct being A. cultriformis, with silvery triangular phyllodes and spikes of yellow globular flowers; A. verticillata, with linear dark green leaves and pale yellow flowers, and the graceful A. pubescens. A flowering stem of a plant from Natal, which has been somewhat of a puzzle to botanists—viz., Greyia Sutherlandi, was shown, and it is peculiar in possessing both smooth and pubescent leaves on the same branches; the flowers are bright red in terminal clusters. Sarcochilus usneoides is a strange little leafless Orchid from India, having small yellow and brown spotted flowers with numerous twisting roots. A large flower head of Brownea grandiceps was very notable.

Flowers of the noble Rhododendron argenteum, the bright R. barbatum, and the red bell-like drooping R. Thomsoni, were included in the group. A distinct Japanese plant, Azalea linearis, has long linear hairy leaves and pink petals of exactly similar shape and size. Some Philodendrons comprised specimens of P. erubescens with a deep red spathe and white spadix, and P. Simonsi, which has a large spathe, bright red at the base, and white above, as also is the spadix. The white Strelitzia Nicolai; the white and drooping Drimys Winteri (Winter's Bark); the orange scarlet Saraca indica (Jonesia Asoca); Haworthias, Arisæmas, and several Bromeliads were also represented. Another group of large specimen Hellebores, bearing some hundreds of flowers, occupied a position near the wall, and with the slender white-flowered Cytisus filipes, the bright green Phyllanthus mimosioides, and other plants, formed an important contribution. The Hellebores were chiefly orientalis, colchicus, and guttatus, and had been lifted from the open ground.

Sir Trevor Lawrence, Bart., M.P., Burford Lodge, Dorking (gardener, Mr. Bickerstaffe), contributed a choice group of new and rare Orchids, well-grown plants, and the majority flowering freely. Especially notable was Cymbidium eburneum with twenty fine ivory-white wax-like flowers. The three selected for certificates and described below—namely, Spathoglottis Kimballiana, Dendrobium crassinode superbum, and D. splendidissimum grandiflorum, were all remarkable plants. Besides these there were examples of Angræcum Ellisi, with long racemes of white flowers; Epidendrum glumaceum, pinkish and white, fragrant; Trichoglottis fasciata, with a leafy stem and neat flowers, white barred with brown, an old but seldom seen Orchid; Odontoglossum Cervantesi roseum, the flowers tinged with red, pretty; Dendrobrium Cambridgeanum, bright gold, with a maroon blotched tip; Masdevallia Lindeni superba, very large and richly coloured flowers; M. Carderi, a peculiar little Orchid, with open, cup-like flowers, whitish dotted with brown, the reflexed tails lighter; M. xanthocorys, yellowish, small; M. ignea, a fine variety; Cypripedium Measuresianum, petals and lip of a glossy brown, the dorsal sepal streaked with green and brown; Angræcum Leonis, numerous racemes of white large-lipped flowers; Cypripedium Swanianum superbum, streaked with reddish purple on the dorsal sepal and lip; and an extremely large deep rosy red spathe of Anthurium carneum, 6 inches wide and 8 inches long.

A. H. Smee, Esq., The Grange, Wallington (gardener, Mr. Cummins), exhibited a group of Orchids, including several interesting plants. Dendrobium macrophyllum giganteum had a number of its large purplish mauve flowers, which possess such a strong and peculiar odour; a strong plant of the old but useful Oncidium sarcodes had a beautiful panicle of its brown and yellow flowers; the dull tinted Phaius Wallichi and several varieties of Cattleya Trianæ were also shown. One of the latter was grown out of doors last year, and had rather small flowers; this season they are larger and of much richer colour in the lip. The variety Emiliæ was notable for its fine shape and colour. Dendrobium nobile, Masdevallia Shuttleworthi and triangularis, with the bright orange scarlet Lælia harpophylla, Odontoglossum Rossi, and the fragrant O. pulchellum were also represented (bronze medal). H. M. Pollett, Esq., Fernside, Bickley, sent an uncommonly fine specimen of Cœlogyne cristata alba bearing about fifty pure white flowers. It was growing in a large basket and was in remarkably vigorous health. Gustav le Doux, Esq., East Moulsey, Surrey, showed a spike of Dendrobrium speciosum, which had been forwarded from France; also a plant of Cattleya Loddigesi (vote of thanks). A cultural commendation was adjudged to W. C. Pickersgill, Esq., Blendon Hall, Bexley (gardener, Mr. Moore) for an extremely well flowered plant of Lycaste Skinneri with twenty-seven massive flowers.

A magnificent group of Hyacinths and other plants from Messrs. J. Veitch & Sons, Chelsea, deservedly secured for this firm a silver-gilt Banksian medal. Amongst the novelties the most noteworthy were the following :—A variegated form of Rosa mierophylla with small leaves prettily streaked and dotted with white; fine specimens of Boronia heterophylla loaded with deep rosy red flowers were very handsome; Trillium discolor atratum has been previously certificated and described, but a cultural commendation was awarded for several plants of Fritillaria Thompsoniana (Lilium roseum), which has delicate blush-tinted flowers on erect stems. The group of Hyacinths comprised about 200 plants with massive spikes, representing all the best varieties in numerous distinct colours tastefully arranged. A new double variety named Violet Gladiator has dense spikes and reddish purple full flowers, something like a double form of Harlequin in colour. Lord Salisbury is another double variety, having taller and looser spikes, larger drooping bells of a similar tint, but with rather more mauve. Of the general collection the following varieties were notable for their clear, pure, or rich colours and fine spikes—King of the Blues, rich blue; Masterpiece, blue-black; Mont Blanc, pure white; Chimney Sweep, deep purplish blue; La Joyeuse, pink; Countess of Rosebery, deep red; Obelisk, yellow; Harlequin, reddish purple; Madame Van der Hoop, white; Lord Derby, pale blue; Alba superbissima and Snowball, white; Distinction, deep crimson red, black centre to the petals; Criterion, yellow; Vuurbaak, bright red; The Sultan, large spike, deep purple; Sybil reddish purple; and Star of Hillegom, salmon red. Several fine baskets of Lachenalia tricol with plants of Rhododendron Early Gem, were much admired.

Silver Banksian medals were awarded to the seven following exhibitors for important groups of plants and flowers. Mr. B. S. Williams, Upper Holloway, had a group of choice stove and greenhouse plants, including good specimens of Dracæna Lindeni, Imantophyllum, in numerous fine varieties, the white and fragrant Toxicophlæa spectabilis, with Ferns and other fine-foliage plants. Orchids were also a feature. Odontoglossums Andersonianum and mirandum were well represented; the peculiar Phaius maculatus, bearing yellow flowers and large green leaves spotted with white; Cypripedium Boxalli, C. vernixium, and others were shown, and a strong freely flowered specimen of the fragrant Dendrochilum glumaceum formed the corner of the group.

Messrs. J. Laing & Co., Forest Hill, staged a miscellaneous collection of flowering and fine-foliage plants, chief amongst which were several specimens of the pale yellow, free, and handsome Acacia Drummondi, with Azaleas, small useful Ericas, Dracænas, Ferns, and Selaginellas.

The Orchids comprised Dendrobiums, Odontoglossums, Masdevallias, and others similar to those noted at the Crystal Palace Show.

Cyclamens from Mr. C. Turner, Slough, formed an extensive and imposing group; some hundreds of well-grown plants were shown, representing a fine strain of seed and good varieties, the flowers large and very abundant. A box of handsome Tree Carnation flowers also came from the Slough Nursery (vote of thanks). Messrs. Lane & Son, Berkhamsted, had a large collection of Roses in pots arranged with Deutzias, and an extremely effective group. Amongst the Roses plants of Général Jacqueminot, Princess Mary of Cambridge, and Countess of Rosebery were noteworthy for the size and number of their blooms. Roses in pots, Amaryllises and Lilacs from Messrs. Paul & Son, Cheshunt, constituted an attractive group. The Roses were capital for such an early show, the plants healthy, and the blooms in several cases admirable. The best were Comtesse de Camando, Avocat Duvivier, Celine Forestier, Dr. Andry, and Souvenir d'un Ami, besides the graceful white Parqueritte and pink Mignonette Polyantha varieties. Plants of Lady Alice, the light coloured sport from Lady Mary Fitzwilliam (which it closely resembles), and the American Rose, The Puritan, were also shown and attracted much attention. The Amaryllises were distinguished by large brilliantly coloured flowers, and the fine white Lilac, Marie Lemoine (certificated) was remarkable for the size of its blooms even in comparison with alba grandiflora shown with it.

Camellias, contributed by Messrs. W. Paul & Son, Waltham Cross, were greatly admired. Twelve boxes of blooms were shown, and a fine selection of varieties included. These will be noted more fully in an early issue, but the following were prominent for their distinctness. C. H. Hovey, Alba plena, Princess Charlotte, Corallina, Fimbriata, tricolor, Mathotiana, Bonomiana, Benneyi, Fatima, and Romanicnsis.

Daffodils and hardy flowers filled one side of a long table, but the collection from Mr. T. S. Ware, Hale Farm Nursery, Tottenham, amply merited the silver medal awarded. All the chief sections of Daffodils were represented, the pseudo-Narcissus, incomparabilis, and poeticus types being in strong force, and comprising some exceedingly beautiful varieties. There were fine pans of the charming blue Chionodoxa Luciliæ, with the darker C. sardensis, Grape Hyacinths in variety, Dielytras, and numberless other choice plants. Messrs. Barr & Son, King Street, Covent Garden, exhibited a choice collection of Daffodils and hardy flowers similar to the above, but not quite so numerous (bronze medal), and Messrs. Collins Bros., 39, South Lambeth Road, S.W., had a group of Narcissus obvallaris, the golden Tenby Daffodil, and the delicately coloured N. pallidus præcox most effectively arranged in glasses (bronze medal). Mr. R. Drost, Richmond, sent large flowering branches of fine white Lilac.

Hæmanthus hicolor from Mr. W. Bull, Chelsea, was awarded a vote of thanks. It is very distinct, with red stamens and linear blush tinted nearly white perianth divisions, the flowers being borne in a dense umbel, as with others of the genus. Similar recognitions were awarded to Messrs. F. Sander & Co., St. Albans, for Masdevallia Sanderiana, which has dark reddish-purple flowers, white in the centre and long yellow tails; and for Mr. Cookson's hybrid Cypripediums, liniolare and pluneurum (venustum × villosum), the latter having a dark lip and petals with a green striped dorsal sepal. Mr. C. Ross, Welford Park Gardens, Newbury, showed a plant of Croton Rossi (vote of thanks.) It is the result of a cross between Weismanni and Veitchianus, and has broad leaves, rich gold in the centre and green margins, very effective. Mr. Moggridge of Topsham was also accorded a vote of thanks for a seedling Abutilon, with very dark red and well-formed flowers. Mr. Troughton sent a plant of Clivia miniata superba, having a large truss of deep orange red flowers. A. S. Smith, Esq., Silvermere, Cobham (gardener, Mr. Quarterman), exhibited a plant of Cœlogyne cristata with two racemes to a pseudo-bulb, having six and eight flowers each. Mr. C. Herrin, Dropmore Gardens, Maidenhead, sent a box of fine Camellia bloom. Mr. Divers, Ketton Hall Gardens, Stamford, showed Camellia blooms and Clianthus magnificus, and Mr. C. Ford, Leonardslee Gardens, Horsham, was awarded a bronze medal for a beautiful collection of Camellia blooms.

CERTIFICATED PLANTS.

Spathoglottis Kimballiana (Sir Trevor Lawrence, Bart., M.P.).—A pretty terrestrial Orchid, with a scape over 2 feet long, having three expanded flowers and several buds at the apex. The flowers are 2½ inches in diameter, the sepals and petals oval, similar in size, shape, and colour, a bright shade of yellow; the lip is small dotted with red at the base. The leaves are long, narrow, and plicate.

Dendrobium crassinode superbum (Sir T. Lawrence).—A handsome variety with large flowers, the sepals, petals, and lip deeply tipped with rich rosy crimson.

Dendrobium splendidissimum grandiflorum (Sir T. Lawrence).—A hybrid between the same species as D. splendidissimum—namely, D. aureum and D. nobile, but from finer varieties. It is a grand Dendrobium, with broad sepals and petals tipped with crimson, the lip broad and open, intensely rich crimson in the centre. The plant shown had three flowering growths.

Phalænopsis John Seden (Baron Schröder).—One of the Chelsea hybrids, and bearing its raiser's name. It was obtained from a cross between P. grandiflora and P. Luddemanniana, and has plain green leaves with flowers 2 inches in diameter, white, freely dotted with purple, the lip three-lobed and tinged with reddish purple. It is the most distinct hybrid Phalænopsis yet obtained, and is very attractive.

Lilac Marie Lemoine (Paul & Son).—An extremely fine single white variety, the flowers seven-eighths of an inch in diameter, in large dense trusses. Very handsome.

Rose Gloire de Polyantha (Paul & Son).—An attractive and graceful variety of the polyantha type, with small neat blooms, deep rose, with white centre.

CRYSTAL PALACE SPRING SHOW.

MARCH 24TH.

THE first Sydenham Show of the present year was held on Saturday last, and, notwithstanding the unfavourable season, the display was a varied and satisfactory one. The Crystal Palace Company have provided a long series of important exhibitions for 1888, and the schedule is an unusually full one. The summer Show is fixed for May 12th (forty-five classes); the National Rose Society's Metropolitan Exhibition for July 7th (forty-seven classes); the National Co-operative Flower Show, August 18th, when £350 and ten medals will be offered. The Fruit Show takes place on September 7th and 8th (forty-seven classes); the National Dahlia Society's Show being fixed for the same date (twenty-two classes). A Hardy Fruit Show will be held October 11th to 13th, and a Chrysanthemum Show on November 9th and 10th. Numerous special prizes are also offered on each occasion, so that an interesting horticultural programme is provided under Mr. W. G. Head's direction.

At the spring Show the chief attractions are invariably the nurserymen's contributions, with the Hyacinths, Tulips, and Polyanthus Narcissi in competition, and on the occasion under notice these were the leading features. The amateurs' contributions of Cinerarias and bulbs were not of first-rate quality, but the season is undoubtedly to blame for many of the defects in these classes, as wherever attempts have been made to hasten the development of the plants the results were not quite satisfactory. In the open classes for bulbs Messrs. H. Williams and Son, Fortis Green, Finchley, and Mr. H. R. Wright, Turner Road, Lee, shared the prizes, the first-named leading with thirty-six Hyacinths, thirty-six Tulips, and twelve pots of Lilies of the Valley; Mr. Wright being second with Hyacinths and Tulips, and first with twenty-four pots of Polyanthus Narcissi. The Finchley Hyacinths comprised some good specimens of Czar Peter, La Belle, The Sultan, Lord Derby, La Grandesse, Gigantea, King of the Blacks, Vuurbaak, and Lord Macaulay. The best of the Tulips were Proserpine, Rose Gris de Lin, Keisers Kroon, White Pottebakker, Vermillon Brillant, Van der Neer, and Joost Van Vondel. The two collections of Narcissi were very close in merit, Mr. Wright's plants having fine spikes and flowers of Her Majesty, Gloriosus, Laura, Queen of the Netherlands, Newton, White Perfection, Apollo, and Bazelman Major. Mr. J. May, Twickenham, and Mr. J. Odell, Hillingdon, were first and second respectively with Cyclamens, and Messrs. Paul and Son, Cheshunt, were first with twelve Amaryllises, strong well-formed plants.

An extremely bright and tasteful group of miscellaneous plants gained Messrs. Laing & Son, Forest Hill, the premier award in the class, flowering and foliage plants being well proportioned. Palms, Dracænas, Crotons, Aralias, and Ferns were the chief of the latter, while amongst the flowering plants Orchids were prominent, especially Cattleyas, Masdevallias, and Dendrobiums; the peculiar D. Brymerianum was notable, also D. crassinode, D. Wardianum, and D. densiflorum. Small plants of Ericas, Cyclamens, Azaleas, and a neat margin of Selaginellas completed the group. Azaleas were shown by Mr. R. Wells, Sydenham, and Mr. C. Nunn, gardener to J. Soames, Esq., Maze Hill, Greenwich Park, but the plants were not quite up to exhibition style in either case.

In the amateurs' classes Mr. C. J. Salter, gardener to C. J. Southgate, Esq., Selborne, Streatham, was the leading exhibitor of twelve Hyacinths, showing capital plants of Solfaterre, La Grandesse, Gigantea, Leopold II., Leviathan, Czar Peter, and L'Innocence. Some of the spikes were very fine. Mr. W. Kemp, gardener to H. Barry, Esq., Bushill House, Winchmore Hill, and Mr. T. N. Penfold, gardener to Rev. Canon Bridges, Beddington, were second and third, the last named being first with twelve Tulips and twelve Narcissi. Mr. C. J. Salter had six good Amaryllises, winning the first prize, Cyclamens, Cinerarias, and Lilies of the Valley being shown by several competitors. Mr. Phillips was placed first with twelve large Cyclamens, but many preferred Mr. Hibbert's second prize plants.

Special prizes were awarded as follows—To Mr. B. S. Williams, Upper Holloway, for a large and handsome group of hulbs and flowering plants; to Messrs. W. Paul & Son, Waltham Cross, for a choice collection of Camellias; to Mr. W. Hibbert, Kingston-on-Thames, for collection of Cyclamen; to Mr. W. Kemp, Winchmore Hill, N., for eighteen Chinese Primulas; to Messrs. Paul & Son, Cheshunt, for collection of alpine plants; to Mr. H. Wright, Lee, Kent, for collection of flowering plants; to Messrs. Barr & Son, Covent Garden, for collection of Daffodils, &c.; to Mr. T. S. Ware, Tottenham, for collection of herbaceous plants and Daffodils; to Messrs. H. Cannell & Sons, Swanley, for collection of winter-flowering Begonias, Cinerarias, and cut Pelargoniums; and to Mr. J. Odell, Hillingdon, Middlesex, for collection of 100 Cyclamens; Mr. H. Bennett, Shepperton, also had a box of Rose blooms, including several promising new varieties.

Certificates were awarded for the following:—

Rose Lady Alice (Paul & Son).—A Hybrid Perpetual of the Lady Mary Fitzwilliam type, previously described.

Narcissus Johnstoni (Barr & Son).—A pretty Narcissus with deflexed flowers, bright yellow, the crown long and straight.

Cyclamen persicum floribundum compactum (J. Odell).—A very strong but dwarf variety, with large flowers, white, tipped crimson.

Begonia semperflorens gigantea rosea (Cannell & Sons).—A vigorous-growing variety with large, deep, very red flowers in fine panicles.

BATH BULB SHOW.

MARCH 21ST AND 22ND.

A CAPITAL display of bulbs and various other flowering and fine-foliaged plants was again forthcoming, and being favoured with delightfully fine weather on the opening day another decided all-round success was scored.

HYACINTHS AND OTHER BULBS.—There was no appreciable change or advance made as far as quantity of exhibits was concerned, but neither the Hyacinths nor Tulips generally were quite so good as usual. In the open class for eighteen Hyacinths, distinct, Messrs. R. Veitch and Son, Exeter, repeated their last year's success, being first with a collection which included many sturdy spikes, carrying well developed flowers. The varieties shown were Queen of the Blues, Madame Van der Hoop, King of the Blues, Grandeur à Merveille, Lord Derby, Koh-i-noor, Marquis of Lorne, King of the Reds, Baron Von Tuyll, Primrose Perfection, Gigantea, Vuurbaak, Garrick, Lady Derby, Duke of Connaught, Czar Peter, President Lincoln, and General Pellissier. Messrs. G. Cooling & Son were second, and Mr. M. Cole, gardener to S. Tredwell, Esq., was third, and there were two other collections shown. The best twelve Hyacinths in pairs were shown by Mr. W. Taylor, gardener to S. P. Budd, Esq., who had Masterpiece, King of the Blues, Cardinal Wiseman, Duc de Malakoff, King of the Yellows, and Lord Macaulay, compact and good. Mr. M. Cole was second. Messrs. R. Veitch & Son were again first in the open class for nine Hyacinths, followed by Mr. W. Taylor. In the next class for twelve Hyacinths, distinct, and confined to amateurs, the prizes were won by Mr. W. Taylor, Mr. S. Kerslake, gardener to the Rev. E. Handley, and Mr. G. Marsh, gardener to M. Dunlop, Esq., Clifton. In a corresponding class for six varieties Mr. W. Taylor was again first, Mr. A. Hawkins, gardener to T. Jolly, Esq., was second, and eight others competed. There were six competitors with twelve pots of Tulips, Mr. Taylor taking the lead with fresh and good examples of Murillo, Emperor of Austria, Grand Duke of Russia, Vermillon Brillant, Tournesol, Salvator Rosa, Proserpine, Velvet Gem, Joost Van Vondel, and Ophir d'Or. Mr. A. J. C. Biss was a good second, while Messrs. Taylor and J. E. Biss were the successful exhibitors of four pots. The best six pots of Polyanthus Narcissus were staged by Mr. C. H. Dutton, the varieties being Gloriosa, Soleil d'Or, and States General. Mr. J. Cannings, gardener to E. B. Titley, Esq., was second. Messrs. G. Cooling & Son were first with three excellent pots of Lily of the Valley, and Mr. J. E. Biss second. Mr. Dutton was first for Crocuses, and Messrs. M. Cole and A. Hawkins took the prizes for Amaryllises. A great number of Cyclamens were shown, but the majority were much drawn and the strain inferior.

FLOWERING AND FINE-FOLIAGED PLANTS.—The display of Orchids was much better than anticipated, and attracted great attention. With six plants the Rev. E. Handley was well first, these consisting of Cattleya Trianæ with eleven richly coloured flowers; Odontoglossum cirrhosum with five good spikes; a freely flowered Dendrobium nobile; Odontoglossum Roezli roseum with eighteen spikes; Odontoglossum Roezli album with twelve good spikes; and Cattleya Trianæ rosea, carrying ten fine blooms. Mr. F. Perry, gardener to H. C. Miles, Esq., Clifton, was second, his collection consisting of Lycaste Skinneri, Dendrobium Ainsworthi, Cypripedium villosum. Dendrobium nobile, Odontoglossum Pescatorei, and Odontoglossum Alexandræ. Mr. W. J. Mould, gardener to E. E. Bryant, Esq., was first for three plants these consisting of Cattleya amethystoglossa, Dendrobium Ainsworthi, and Cœlogyne cristata. Mr. R. B. Cator was second. The most beautifully flowered specimens were staged in the class for one Orchid. In this instance Mr. W. J. Mould was first with Phalænopsis Schilleriana, having a grand branch bearing about fifty expanded flowers. The Rev. E. Handley was second, staging Dendrobium Wardianum with five pseudo-bulbs, carrying on an average twenty blooms each.

The class for six Roses in pots was also a good one, there being five well flowered trained plants. Mr. H. Kiff, gardener to R. B. Cator, Esq., was first, having freely flowered specimens of Madame de Sertot, Souvenir d'un Ami, Madame Willermoz, Celine Forestier, Rubens, and Anna Ollivier. Mr. H. Jones, gardener to C. Doherty, Esq., was second, and Mr. S. Kerslake third. Messrs. W. J. Mould, H. Jones, and A. Hanham, gardener to T. Jolly, Esq., were the principal prizewinners with trained Azaleas, and the two first-named were also successful with stove and greenhouse flowering plants and Ferns. Primulas were well shown by Messrs. W. J. Mould and W. Taylor; Cinerarias by M. Cole and A. J. C. Biss; table plants by F. Perry and A. J. C. Biss; and fine-foliaged plants by W. J. Mould and W. C. Drummond, who took the prizes in the order named in each instance. Mr. M. Cole was placed first for six pots of Violets, which included De Parme, Princess Maude de Savoie, New York, and King of the Violets.

GROUPS.—There were three classes for these, and the competition was keen in each instance. Messrs. G. Cooling & Son were well first for a group to occupy a space 12 feet by 6 feet, the arrangement being fairly light, and comprised Azalea mollis, Indian Azaleas, Ericas, Cattleyas, Odontoglossums. Cypripediums, and other Orchids, Palms, and Ferns. Mr. W. C. Drummond was a creditable second. Groups 9 feet by 6 feet were arranged by amateurs, and in this class Mr. W. J. Mould was easily first, and Mr. T. J. Tate second, the latter having a very densely packed arrangement. There is a great sameness about all the Bath groups, and it is to be hoped some of the exhibitors will on another occasion attempt something more novel and less formal. Five capital groups of Daffodils and Narcissi were arranged, these plants being very popular in Bath. Mr. S. Kerslake was first, and Mr. A. A. Walters second. A group of herbaceous plants in pots, staged by Mr. M. Cole was awarded the first prize, and fully deserved it.

CUT FLOWERS AND BOUQUETS.—Mr. H. Riff was first for twelve cut Roses, among these being a very fine Souvenir d'un Ami, and good Madame Willermoz, Madame de Watteville, Niphetos, A. K. Williams, Catherine Mermet, and La France. Mr. S. Kerslake was a good second, his best being Lady Mary Fitzwilliam, Madame J. Halpin, Grace Darling, Madame Lambard, and W. F. Bennett. Messrs. Cooling and Son also staged several good blooms. Mr. E. T. Hill was the only exhibitor of a vase for table decoration, and was rightly awarded the first prize. Only three hand bouquets were shown, but two of them were extra large, and much difference of opinion existed as to the decision arrived at by the Judges. The first prize was awarded to Mr. C. Winstone, Clifton, who had a bouquet wholly formed with Orchids; these measured 18 inches across, and were much too closely packed. Messrs. Perkins & Sons had a much more tastefully formed bouquet, the flowers used also being choice. This also was too weighty, but should yet have been first. Mr. Winstone was first, and Messrs. Perkins & Sons second in the class for ladies' sprays, and the same positions were held by these exhibitors with gentlemen's buttonhole bouquets. The majority of the latter were much too large. Mr. J. Cypher, Cheltenham, had a grand stand of Orchid blooms, not for competition, interspersed with Fern fronds. Conspicuous were Cattleya Trianæ magnifica, C. Percivalliana, C. amethystoglossa, Dendrobium Jamesianum, D. Ainsworthi rosea, Odontoglossum Roezli in variety, Angræcum sesquipedale, Cypripedium Harrissianum splendens, Odontoglossum Alexandræ, Cymbidium eburneum, and the Chatsworth variety of Cœlogyne cristata.

FRUIT AND VEGETABLES.—Few Pears and Apples were shown. With one dish of the former Mr. E. T. Hill was first, staging Beurré Rance in good condition, Mr. Leaney being second with Uvedale's St. Germain. A dish of well kept King of the Pippins won Mr. Leaney the first prize in the class for Apples, and Mr. W. Iggulden, Frome, was awarded the first prize for a good dish of Strawberries, the variety being the Princess of Prussia. Mr. M. Cole was first for Mushrooms, and Mr. A. J. C. Biss second. Mr. W. Evry first for Seakale, and Mr. W. Tylee second; and Mr. Evry first for Asparagus, the exhibits being good in each instance. Mr. W. Evry had the best six dishes of vegetables, these consisting of Kidney Beans Ne Plus Ultra, Asparagus, Mushrooms, Seakale, Brussels Sprouts, and Potatoes. Mr. W. Tylee was placed second; while the prizewinners with Cucumbers were Messrs. M. Cole and S. Kerslake.



ROSES AND THEIR RAISERS.

IT may interest "D., *Deal*," to have the dates and names of the raisers of the Roses he mentions on page 243, and which are as follows:—Laurette, Verdier, 1852. Emilie Dupuy, Levet, 1870. Claire Carnot, Guillot, 1873. Countess of Limerick, Nabonnand, 1877. The substitution of Emilie Dupuy for Belle Lyonnaise is one which might be generally recommended, for Belle Lyonnaise is sadly tender, and the flowers are easily spoiled by wet, whereas Emilie Dupuy is hardy, and opens fairly in late autumn.

I am glad to see that "D., *Deal*," continues to look after the single Roses, especially the beautiful Austrian Yellow and Copper. Here R. berberifolia Hardyi has survived the past two winters, both on the rockery and in the open, and flowers most freely.—T. W. GIRDLESTONE.

OIL AND SULPHUR AS A PREVENTIVE OF MILDEW ON ROSES.

As some of your correspondents seem troubled with mildew I may state that I have found oil and sulphur applied to the hot-water pipes quite effectual in destroying mildew, and up to the present as a preventive. Some weeks ago we found the mildew making its appearance on pot Roses, and also on climbers trained to wires on the roof of our Rose house. I procured some linseed oil and flowers of sulphur, mixed to the thickness of paint, and applied to the return pipes with a paint brush. The mildew soon disappeared, and has not returned. I consider this preferable in every way to the solution mentioned on page 243, and I strongly recommend those having Roses affected with mildew to try it. It is easy of application, very effective, and only needs to be tried.

I may also state that I agree with your correspondents "N." and Mr. D. Gilmour, jun., in not admitting air to forced Roses. Our ventilators have not yet been opened, except on one or two occasions about an inch at the top, but in future under the same circumstances they will not be opened. On bright days we open the door which admits to the greenhouse adjoining, in which the ventilators are open.—GEO. HILTON.

ROSES ON THE MANETTI.

A CORRESPONDENT sends me a sketch of a Rose plant he has received with others, and asks, "How he is to plant it, or what is he to do with it?" My reply is, "Throw it away if it is on the Manetti." If we waste our time at all in planting Roses on this stock, we must, to plant them properly, bury the Manetti 2 inches below the surface. If we do so in this case, the roots will be so far from sun and air, that



Fig. 34.—Manetti budded too high.

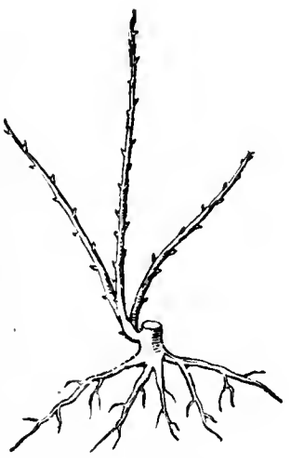


Fig. 35.—As it should be budded.

failure will probably result. When such plants as these (fig. 34) are received from the nursery, by far the best course to adopt is to return them at once.

I give a sketch (fig. 35) of what a budded plant should be on any stock. This, I think, bears its own explanation with it without further words from me. I may say, however, that the stock might be cut a little closer without detriment.

Where fig. 34 happens to be on a Briar it should be treated as a small standard; at any rate this is the way that such a plant will answer best; in this way only can the roots be placed near enough to the surface.—D. GILMOUR, JUN.

UNDER GARDENERS.

IN reply to "J. P. L.'s" remarks, I repeat that my opinion of under gardeners writing down those less fortunate than themselves is very poor. Your correspondent hastily accuses me of denouncing head gardeners. I spoke in praise of four, three I had served under, and only noted one exception. I am sorry for the discernment of "J. P. L." if he thinks this denouncing them all. When letter after letter appeared written in a spirit of censure against under gardeners, it behoved me to take up their defence as a sympathiser with those who suffer wrong not of their own making. This brings me to the remarks on forgetting my position. I am of opinion that no individual should hold the future of his subordinates at his entire mercy, to give a character or to withhold one. In that I even propose to limit my own power, for I am master of my position, and my employer never intervenes between me and my men. I thank "A Foreman" for his remarks. I hope soon to hear he has joined the ranks of head gardeners, who know how to get the most work done and yet treat their men kindly.—HEAD GARDENER, *The Grove, Teddington.*

SELF-IMPROVEMENT.

I SEE in the Journal that young gardeners are recommended to learn shorthand. Several years ago I learnt enough of shorthand to be able to take down the greater part of the sermons in church on Sundays, but as I did not find it of any other use it gradually fell into the background, and I do not think I could make use of it now without learning it afresh. There are many other subjects more useful than shorthand to gardeners. The following I consider the best in the order given:—Writing, spelling, English grammar, drawing, botany, agricultural chemistry, Latin and French. If the rudiments of the last four subjects only are learnt, they will be found very useful, but of course it will be much better if any or all of them can be thoroughly mastered. I find them all useful at times, with the exception of shorthand, and for that reason I recommend it to be last taken up.—J. L. B.

I HAVE read with much interest the correspondence under the heading of "Under Gardeners." I have been an under gardener for the last nine years, and confess I have been under more good masters than bad. Some head gardeners are very exacting in expecting the men under them to work overtime systematically and without any recompense. I am not against working an hour or two overtime on special occasions, but, on the contrary, am quite willing to do so, and I do not like to see young men leave off work as soon as the hour strikes as if they were wound up like the clock. I have always had pleasure in working in preparing for an exhibition, and had ample reward in visiting the show. My advice to my fellows is to do the best they can in their positions, and look forward to better days. Head gardeners have bad times to contend against, restricting labour, and allowance should be made for this by subordinates.—SCOTCHMAN.

[A "Scotchman" requested us to correct his manuscript; we have done so freely, and now advise him to improve himself before he writes to the press again, and then to afford space between the lines for revision. At present we cannot congratulate him on the excellence of his work. A letter from "A. B." is not suitable for publication, and he must strive assiduously in improving his education if he aspires to the rank of a good representative British gardener.]

FRUIT PACKING.

MR. PETTIGREW'S reply to my criticism, contrary to his intention, is certainly courteous. Of course, I could not have been aware his paper on the above subject was written at the request of his particular gardening friend, who he states is a constant reader of the *Journal of Horticulture*, and a keen observer. No doubt the same distinction is equally applicable to a large number of readers, and this must be my only plea for intrusion. Mr. Pettigrew is evidently desirous that his plain statement of facts should be rightly understood. I must confess, as they have been stated, I have not comprehended them. For instance, Mr. Pettigrew states he can send Grapes hundreds of miles under pressure on all sides of packing materials, and at the journey's end they will be found as fresh as when cut from the Vines. The secret of this would be well worth knowing even by the keenest of observers; but possibly I may have mistaken the meaning of Grape packing, as Mr. Pettigrew says I have done respecting the use of two boxes in Peach packing. They may both be statements worth knowing to all constant readers, and especially to—R. W.



PRINCESS TECK IN SPRING.

IN reply to Mr. W. Brown (page 223) relative to late-blooming plants of the above Chrysanthemum mentioned by Mr. Pettigrew, I am glad to give any information I can. Your correspondent asks how many flowers were borne by each plant, and of what size were the largest blooms?

Fifty plants after blooming as usual were cut down with the general stock. But these plants, I am informed by the propagator, were struck from late-flowering plants of last spring, and were not more than eleven months old when I told Mr. Pettigrew they were struck with the general stock. Every year we have some plants of Princess Teck to throw up late bloom, but this season every plant threw a good head of growth, which has bloomed profusely, and the plants have averaged three dozen blooms each of the ordinary size of those usually produced in autumn and not disbudded. Up to this time they have made as good a display as in the autumn, in proportion to the number grown. The flowers are more variable than those of the same plants in the autumn, many of them being reflexed and almost Japanese in character. Whether I have obtained simply by selection (the Chrysanthemum being perhaps more given to sporting than any other florist flower) an approach to a perpetual flowering Chrysanthemum or not I cannot say, but certainly the side shoots are again breaking into buds at almost every point on plants not yet cleared of their bloom, just as a Marguerite would do.

In this district (South Wales) our greatest demand for white flowers is for grave decoration on "Flowering Sunday"—the Sunday before Easter, after which I do not expect to keep the plants, but I will certainly retain a few that anyone interested in their repeated blooming may see them. I send a handful of young growth taken from one plant (that has already yielded two crops of bloom—viz., in the autumn, and during February and March), with buds in all stages. I send only a few open blooms as they are wanted this week, as just mentioned.—R. CROSSLING, *Penarth Nurseries.*

[The blooms received are exactly as described by our correspondent, and the young growths are bearing a profusion of buds from the size of peas upwards, the florets of some just unfolding. There are eight of such buds branching from one stem, all fresh and healthy, and which would have expanded if left on the plants. The flowers are admirably adapted for wreaths.]

SUMMER FLOWERING CHRYSANTHEMUMS.

IN my opinion these are the most useful plants in the flower garden. They are hardy, and they are so easily managed that any novice may succeed with them. They flower freely in all situations. They grow well in towns under the direct influence of smoke, exposed to the sea breeze, under the shade of trees, and in positions where flowers generally do not succeed, and yet these Chrysanthemums prove gay and attractive under all circumstances. They begin flowering about the end of June, and continue to do so until frost destroys them. When we had our first plants of them we propagated them in heat in the spring, but when once the plants were established in the open we ceased to propagate indoors, and now allow the plants and roots to remain in

the soil all the winter, when they are lifted in April, divided into little pieces with a root attached to each, and replanted. This is our practice when we wish to increase them; if not, they are allowed to remain in the same position. Beginners will, however, require to buy a few plants, and I would advise this being done now, as many cuttings may be secured from the new plants before planting time. Immediately the plants are secured place them in moderate heat, and as soon as the growths are sufficiently large to form cuttings, take them off and root them in gentle heat. Placed out in May in the open they spread their sucker-like growths before the autumn, and these may be divided the following spring. Soil that will grow Pelargoniums will always produce fine Chrysanthemums of this class. Probably anyone not acquainted with these Chrysanthemums, seeing an isolated plant in flower might feel disappointed with it, as the flowers are not large, or anything like those huge blooms seen at shows, but when seen in a mass or in long rows they delight everybody. They may be used in the most artistic flower garden, the best kept pleasure grounds, or in the borders of any kitchen garden. The following are six useful varieties, named in the order of merit:—Madame C. Desgrange, white, yellow centre; Félicité, orange yellow; Lyon, deep rosy purple; Souvenir de M. Rampont, reddish; Nanum, silvery blush; and Frederick Pélé, deep crimson.—J. MUIR, *Margam, S. Wales.*



FRUIT FORCING.

FIGS.—*Earliest-forced Trees in Pots.*—The fruit will soon commence ripening, especially the small varieties, when the supply of water must be gradually reduced, and gradually withhold moisture from the atmosphere, keeping the top lights open constantly. Still continue to supply liquid manure to those trees on which the fruit is swelling, and syringe the trees at closing time, ventilating in favourable weather.

Early-forced Planted-out Trees.—Surface roots are of importance in the cultivation of fruit trees, especially those grown under glass with the roots inside. No fruit tree produces such roots so freely as the Fig if means are adopted to encourage them. A mulching of about 3 inches thickness of partially decayed manure will attract the roots to the surface and prove beneficial if kept moist. Liberal supplies of water or liquid manure will be necessary to assist in swelling the fruits satisfactorily. Continue to pinch out the points of the shoots and thin all crowded growths. No kind of fruit tree is more benefited than the Fig by the full rays of the sun; shading of any kind, even too much of their own foliage, is injurious. The temperature may now be increased to 60° to 65° at night, and in the daytime from 75° to 80° with sun heat. Attend to tying-in the shoots, allowing space for growth.

Raising Young Trees.—If it be desired to increase the stock cuttings may still be inserted, selecting shoots about 6 inches long, taking them off with a heel or portion of last year's wood attached. They strike readily in bottom heat. They are best inserted in 3-inch pots singly. When rooted shift without delay into 5-inch pots, and when they fill that size with roots transfer to 12-inch pots. Good drainage is necessary, and turfy loam with about a sixth of old mortar rubbish and a fifth of decayed manure forms a suitable compost, potting firmly.

PEACHES AND NECTARINES.—*Earliest Forced Trees.*—Do not hurry the trees during the stoning process, but continue the temperature at 60° to 65° at night, 70° to 75° by day with sun heat, and about 65° by day in dull weather, being careful to avoid sudden fluctuations or depressions. Tie the shoots to the trellis as they advance, and regulate the growths for future bearing so as not to have them too crowded, as by giving the shoots plenty of room the fruit is better exposed to sun and air, and the wood for another year is stouter and better ripened. Shoots disposed to grow more than 14 inches may have the joints pinched out, those remarks not applying to extensions. When the stoning process is over, which may be ascertained by testing a few fruits with a knife, the fruit will require regulating for the swelling-off period. Very vigorous trees may be allowed to carry a few more than those that are weakly, but on no account unnecessarily tax the trees with more fruit than can well be brought to maturity without prejudicing future crops. Weakly trees should be supplied with liquid manure, and the inside border in any case must be kept properly supplied with water, mulching the surface with partially decayed manure. This will secure more uniform moisture, and the fruit will swell to a good size. The temperature may be increased to 65° or 70° at night, and in the day to 70° or 75°, maintaining 85° or 90° through the day from sun heat; ventilate from 75°, and close early with plenty of atmospheric moisture. The very early varieties, such as Alexander, Waterloo, and Early Beatrice, will soon give indications of ripening, when syringing must cease, and the leaves that shade or overhang the fruit must be drawn aside, and the fruit raised on laths if necessary across the wires of the trellis so that its apex will be placed directly to the light.

Trees Started at the New Year.—The fruit has swelled very tardily, owing no doubt to the arctic weather that has prevailed for some weeks. Stoning will, however, soon commence, care being necessary to prevent sudden checks by injudicious ventilation, cold air in the daytime and too high a temperature at night being fatal. Rest content with a night temperature of 60° to 65°, 5° less on cold nights, and 65° by day in dull weather, with 70° to 75° from sun heat.

Trees Started Early in February.—These are a full fortnight later than usual, but the set is very satisfactory so far. Syringe as soon as the fruit is set on all the trees, which will assist the trees to shed the remains of the blossoms, but avoid heavy syringing, an occasional one being what is needed until the foliage is more advanced. Allow a night temperature of 55° or 60° in mild weather, ventilating from 65°, permitting an advance from sun heat to 70° or 75°, but with full ventilation.

Disbudding.—This should be attended to early—as soon as the shoots can be displaced with the finger, and be followed up day by day until only the shoots required for future bearing or the extension of the trees are retained—viz., one from the base of the shoots now fruiting, and another on a level with or above the fruit; the latter, not being required for extension, should be stopped at a few joints of growth. In the case of trees not full grown it will be necessary to leave shoots about 15 inches distance apart, calculating from the base on last year's growth, to form the bearing shoots of next year, the terminals being trained in their full length as space permits. Closer training is often practised, resulting in weak overcrowded growth, not nearly so satisfactory as growth fully exposed to light and air.

Thinning the Fruits.—When fairly set thinning should commence, removing the smallest first and those on the under side of the trellis, beginning with the weakest part of the trees, thinning proportionately more than on stronger wood, which from carrying more fruit will tend to the equalisation of the vigour of the tree. The fruit ought not ultimately to be left closer than one to every square foot of trellis covered with growth, but Nectarines being a smaller fruit may have one to every 9 inches square (81 square inches) of trellis covered by the trees. The first thinning should commence not later than the fruit is the size of horse beans, the second when the size of marbles, when very few more should be left than is required for the crop, looking over again when the fruit is the size of walnuts, and very few indeed over the intended crop should be left, though there should always be a margin for casualties.

Syringing.—Syringe all trees not in flower, twice when the weather is bright, so as to keep them free from red spider. The afternoon syringing should be done at closing time, so as to have the foliage nearly dry before night. If the trees have water hanging from the edges of the leaves in the morning, as sometimes occurs with very vigorous trees, omit the afternoon syringing.

Heeling-in the Shoots.—This should commence early, as it requires to be done carefully so as not to bring the shoots down too sharply, yet it is necessary that it be done; indeed, it is of the utmost importance where symmetrical training is considered, and in securing the growths to the trellis that space must be left for the swelling of the shoots.

Trees Started Early in March.—Syringing must cease when the anthers show clear of the petals, but a genial condition of the atmosphere should be secured by damping available surfaces in the morning and early afternoon. Prevent a vitiated atmosphere by leaving a little air on constantly by the top ventilators. The night temperature should be 50°, falling 5° or more through the night in severe weather, 50° to 55° by day, and 65° from sun heat. The inside border must not lack moisture.

Latest Houses.—The trees have the blossoms opening, and as they are very abundant thin them well, particularly on the under side of the shoots. Failing bees (which are the best fertilisers) shake the trees daily from the first pollen ripening until the last of the blossom needs attention, selecting the early part of fine days where artificial impregnation is resorted to, and it is a capital plan to dust every blossom when the pollen is ripe with a camel's-hair brush, a feather, or some other light substance. Any trees deficient of pollen should have some taken from those that afford it plentifully, as the small-flowered varieties usually do. The temperature should be maintained at 40° to 45° at night, 50° to 55° by day, in all cases accompanied by slight ventilation at the top of the house, which must be increased when the temperature reaches 50°, and full at 65°.

Unheated Houses.—The buds are, despite the weather and the lights being off until the middle of March, swelling rapidly. Observe 50° for ventilating, and do not allow an advance above 65° without full ventilation both top and bottom, and close the house at 65° when there is a prospect of frost at night, but leaving on a little air to allow of moisture escaping. In mild weather leave the ventilation on when the temperature is over 50°. As there is a superabundance of blossom buds remove those on the under side of the trellis.

PLANT HOUSES.

Azaleas.—Ghent and mollis varieties of Azaleas as they cease flowering should be protected in a cool house or in frames until the weather is sufficiently genial to plant them outside. If turned out of warm houses and planted at once the young growth they have formed is generally killed and the plants seriously injured. This treatment weakens them to such an extent that they are at least two years before they are again in a fit state for forcing. If well cared for and allowed to develope their growth in a cool house, and then plunged outside towards the end of May or early in the following month, they will set buds freely and be in the best possible condition for early forcing. The same treatment should be accorded such Rhododendrons as Early Gem, præcox, multiflorum, and others. They flower profusely every year when confined to

pot culture, and come into flower by the most gentle treatment long before they would if subjected to planting out after flowering. Any plants that have grown too tall or become bare at the base may be well cut back. Azaleas subjected to this treatment are best planted out directly they have been hardened, while Rhododendrons should be kept under glass for the next three months at least.

Deutzias.—Plants that have flowered may be well pruned provided they are in good health and in a luxuriant condition. If the plants are old, and their pots crowded with roots and incapable of making strong growth, the branches should be judiciously thinned only, merely removing flowering portions that have only a terminal growth upon them. Grow the plants for a time in a vinery or Peach house where the temperature does not exceed 55°. Young shoots strike freely in sandy soil in heat if they can be kept close and shaded from the sun. They may be rooted thickly together in pots or pans, and afterwards transplanted 2 or 3 inches apart in boxes, or in a frame, in which a slight hotbed has been made to give them a start. Admit air liberally to plants in cold frames that were cut back closely, but close early in the day while the sun is still on the frame to induce the plants to make an early growth.

Lilacs.—Prune plants closely of Charles X. that are grown in 8-inch pots directly they have flowered. Allow them to break into growth in cold frames, and then plunge them outside about the time advised for Azaleas. If the pots are thoroughly crammed with roots, give them a small shift at once in a mixture of loam, sand, and one-seventh of manure. Press the soil as firmly as possible.

Guelder Roses (Viburnum Opulus).—The young shoots root freely in heat, and if placed into 4-inch pots, and well cared for afterwards, they will make sturdy specimens before the close of the season. Plants raised by this means are useful in 5 and 6-inch pots for forcing at the end of the second and third season. The best method undoubtedly is to strike the cuttings in the open ground by inserting them in autumn and allowing them a season's growth before potting. But those who have not followed this plan should raise stock from young wood at the present time. Cut back closely plants that have flowered, and place them into pots slightly larger, using the soil advised for Lilacs. Allow them to break in cold frames, and then plunge the pots outside in a sunny position.

Prunus.—Cut back plants that have flowered. Allow them to make their growth in a Peach house or similar structure. Cuttings of P. sinensis fl. pl. root freely, while P. triloba, to flower it profusely, must be worked on the Plum stock.

THE BEE-KEEPER.

NOTES ON BEES.

THE WEATHER.

In spite of the mildness experienced in January and the advanced state of vegetation at that time, the unfavourable February with its snows, keen frosts accompanied with cutting winds, has performed its work in a manner that will be disagreeable to many persons. Many plants that stood the lowest temperature of the year have succumbed to less severe but more protracted cold, and vegetation that was fresh and green at the beginning of February is now a mass of decay. Rain has been falling copiously, and it is to be hoped that a dearth of water has been averted, as seldom, if ever, at this season, have we seen the ground so dry and springs so low as at present. Those who are liable to suffer dearths of water should make some provision for storage. With all the rigours of an Arctic winter we have experienced, Nature has not been dormant, for while blackened vegetation above ground greets our eyes, underground life has been actively at work, and many flowers are peeping out.

OUTWARD INSPECTION OF HIVES.

Turning to our bees, how have they fared under the cold? A glance around our hives shows the safety of every one except a pure Syrian stock, which had succumbed after a gradual decrease in numbers throughout the winter, proving that they are ill adapted for a cold climate, and that in-and-in breeding impairs the constitution. After being satisfied with the state of the Syrian, the Carniolian wintered on one comb had my attention. My fears for its safety were not altogether groundless, as on the 26th February, when the thermometer stood at 25° Fahr., the bees flew as if swarming, humming loudly for twenty-four hours as if they had lost their queen. It is safe, however, and breeding has been in progress during the cold spell, as many young bees were on the wing. The cause of the unexpected and untimely flight was, in my opinion, due to the necessity of the bees having a cleansing flight, and probably to feed a little, as the feeder has not been from it at any time since the bees were put into the hive on the 29th November. This hive was more restless than the others owing to its consuming more food to keep up the heat in their exposed state than those hives fully equipped for the winter's campaign.

The lessons it gives are—First, Bees ought to be kept in such a manner that the most severe cold will not lower the temperature below 50° Fahr. inside the hive, and to be kept at that, or even higher. How to effect these conditions I have frequently described. The second lesson is that no hive should be closed to confine the bees longer than a few hours when snow has newly fallen, because if bees require to fly they ought to have their liberty; confining them hastens their death within doors. A well managed and well furnished hive seldom requires any attention, and very seldom loses bees through flying in ungenial weather. The third lesson is to give bees every opportunity of flying out, as that lessens the risk of losing many bees when they fly out suddenly after a long confinement. Although the day this hive flew was so cold few bees were lost. Three weeks previous, the bees of this, as well as al others were working, and had aired themselves perfectly, and had their site marked and well on memory, consequently most of the bees ventured no farther than a few feet from their hive, returning in a few seconds.

Notwithstanding the severity of the weather during February, all my other hives have been breeding, and to a great extent, too. The one I joined the queen to at the end of January has thousands of young bees hatched which have shown themselves upon the alighting board—in fact, so far forward is this, as well as many of my other hives, that were it possible the honey flow would appear in three or four weeks from this date, most of them would be in a fit state to fill supers.

SYRIANS AND CARNIOLIANS.

The crossed Syrians are the most active and furthest advanced, but the Carniolians are also well forward. My nuclei are now much stronger in bees, and, as I predicted, are likely to be as forward by the middle of June as any—quite time enough for our district, and will not require any feeding whatever. I cannot vouch for that with the strong and furthest advaneed. Every one is in full-sized hives, having room for every requirement of the bees except supering.

FERTILITY OF QUEENS.

I note what "A Hallamshire Bee-keeper" says at page 205 concerning the fertility of queens, and endorse his remarks. The wonder is that anyone would attempt to dispute the fact, and how anyone can adopt hives so much smaller than the bees require seems to me a greater wonder still. I know something about the subject in "A Hallamshire Bee-keeper's" other remarks, but my remarks thereon must be delayed till a future occasion.

THE STATE OF HIVES FOR EARLY DISTRICTS.

From the description of the two classes of hives it will be observed that I put no stress whatever upon the present strongest ones over my weaker lot, the latter being the ones most likely to turn out best from a commercial point of view. But in the sunny south, where honey is to be had in abundance by the 1st of April, and cease to be gathered in June, the usefulness of well advanced hives cannot be disputed. The first Stewarton super filled in the south of England was due to my instructions, and here, so far north, my hives are ready for work on the greatest emergency under the greatest glut of honey that is possible to be, on the 1st of April or even earlier. The whole instructions for effecting the above will be found in back numbers, youthful queens being the key and a principal element to success.

Writers upon bees have been telling us now is the time to crowd our bees on fewer combs, which does not sound like advanced bee-keeping, especially where bees are wanted in April. What advice would those writers give in the case of my own bees in their ad

vanced state that cannot be contracted? Instead of being unable to fill 10 square feet of comb at the height of the season, several Syrian stocks have that space filled at present, and they were but nuclei in August. We want not only a strong hive of bees, but bee-keepers who know how to have full hives.

CARNIOLIANS THE BEST.

Taking everything into consideration, including the timidity of bee-keepers, I strongly advise the adoption of the Carniolian bee. They are undoubtedly the hardiest and most docile race of bees we possess, while their honey gathering propensities are good; besides, they frequent the receptacles of grease less, if at all, than any other variety, hence the purity of their comb. Bee-keepers going in for these bees should be careful to have queens from a reliable source, so that they are pure and come of a proper strain. Some dealers are not very particular in this matter, which I have good proof of. The pure Carniolian bee should be in shape not unlike the Ligurian, the whole of its pubescence of a light silvery grey, as well as the rings on its abdomen. There ought not to be any visible yellow band, although sometimes a rusty brown may be detected on the first ring of the belly, and when viewed against a window the two first bands appear slightly golden. Such, then, are the main features of this bee. Is it possible that imported queens can be other than pure? To settle the question on these, as well as the Ligurian bee, Mr. Frank Benton says, speaking of queens—"Some Carniolian queens are as yellow as Italians, yet they invariably produce workers and drones which are distinctively Carniolian." My own experience. "Yellow workers are not found in Carniolia, while black bees—natives, too, and not imported, exist in Italy," confirming the opinion of many that true mongrels were imported to this country as pure Italians, and the reason I discontinued keeping Italian bees. "I neither keep nor breed Italian queens, and the only drones in my apiary, or in this part of Carniolia, are Carniolians."

The above few quotations out of many with my remarks have been given because of many inquiries on the subject were prompted through an article written by "W. R." in another Journal, in which article he stated that "F. B." had Ligurians in his Carniolian apiary, a statement not in accordance with facts. It is to be hoped, however, that such strictures in regard to the best bee known will not deter bee-keepers from applying in the proper direction, and become possessed of these amiable and profitable bees, as they have long since proved themselves to be to—A LANARKSHIRE BEE-KEEPER.

TRADE CATALOGUE RECEIVED.

Harrison & Sons, Leicester.—*Catalogue of Farm Seeds.*

TO CORRESPONDENTS

*** All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Books (*T.K.*).—A cheap work on Orchids is published at this office, price 1s., post free 1s. 2½d. (*O.H.*).—The "Chrysanthemum Annual for 1888" has just been issued, price 1s., post free 1s. 1d., from the publisher at this office. (*W. Boddy*).—We do not know the book you name, possibly your friend is mistaken.

Name of Violet (*Violet*).—The Violet is Belle de Chatenay, which is of another type—viz., of the odorata section; Count Brazza, White Neapolitan, is of the italica type, and the best white Violet, but it requires frame treatment in winter.

Madame Lambard Rose (*Hayes*).—Few Roses are more variable than this, and it is not unusual for a plant to produce blooms of different shades of colour. The example you send is one of the darkest we have seen, but whether plants raised from buds taken from the shoot would produce similarly dark blooms constantly can only be determined by experiment.

Tuberous Begonias (*A. Newell*).—You have done well in exhibiting these plants nine times and being awarded nine first prizes. We cannot enter into personal questions in connection with public controversy. Persons may entertain quite different views on a matter yet be equally honest in their convictions, and we have found after no slight experience that those who impute motives usually betray themselves.

Orchid Collections (*Sheffield*).—We are unable to comply with your request, as to publish the information in the form suggested would be the reverse of agreeable to most of the persons mentioned, and would inevitably lead to protests and disputation. A list of the leading growers is published in Mr. Lewis Castle's work on Orchids, and descriptions of leading collections have appeared from time to time in our columns.

Heating Greenhouse (*A. B. C.*).—The cubic contents of the house are about 2500 feet. To heat the house sufficiently for Pelargoniums, Azalcas, Cyclamen, &c., two rows of 4-inch pipes—*i.e.*, a flow and return along one end and the front, will be sufficient to maintain in the severest weather a temperature of 40° to 45° at night and 45° to 50° by day—the proper temperature for a greenhouse during the winter months. It is not necessary to have the pipes all round the house, the back wall being in favour of the heating, a somewhat lessened quantity of piping being required than if it had been glass.

Improving Lawn (*A. D.*).—The mixture referred to could scarcely fail to do good if the soil is impoverished. It would be advisable to "comb" out much of the moss with a small iron rake having sharp teeth, and if the grass is thin it would be advisable to sow some lawn grass and white Clover seeds; then if a little sifted soil containing a liberal admixture of lime could be applied, the seeds would be protected from birds, and the lawn generally improved. The fertilisers may be applied in addition to the soil dressing, or without it, as may be most convenient to yourself.

Tuberoses not Flowering (*R. S.*).—Judging from the specimen received we think the cause of the flower stem being blind is due to a check, probably when the plants were removed from the bottom heat, it not having been done gradually so as to avert a sudden cessation of nutriment, or it might have been occasioned by removing from the stove to the vinery, the former, we presume, being fully 5° warmer than the latter. Sometimes Tuberoses go blind through the roots being lifted before the flower buds are fully formed in embryo, the growth not being completed, and though they throw up flower stems they rarely expand satisfactorily.

Weevils on Ferns (*W. D.*).—The beetle-like insect you have sent is the destructive Otiorhynchus sulcatus. When numerous they do much damage, eating almost any kinds of plants, and they seem to have a special liking for Ferns. As they feed chiefly at night, that is the time to attack them, and if the plants are in pots they can be shaken violently over a white sheet for dislodging the enemy. They are easily seen on a white surface, and can be the better prevented from escaping than if less visible on a brown mat. Solutions of tobacco and quassia water, not so strong as to injure the plants, have been recommended for rendering them distasteful to the weevils.

Potting Odontoglossum Alexandræ (*W.*).—The plants are usually potted at the end of August or during September, as the sun heat is then declining and there is less danger of their suffering. It could, however, be done now if the plants have flowered or are not too much advanced in growth. When plants are in full growth it is always inadvisable to repot them, as they are very readily checked and perhaps permanently injured. Any of your Odontoglossums still flowering or growing freely should be left until after summer, unless you like to sacrifice the flowers for the benefit of the plants, and if the latter are not strong this will be a good course to adopt, as bearing the flowers long is very weakening.

Hardy Bamboos (*Somerset*).—These will probably succeed well with you, but they should have a sheltered situation. Prepare the soil by digging deeply, incorporating a little leaf mould and old manure, and place the plants out in April. They will not need the tubs, indeed they will probably succeed better planted out if well supplied with water during the summer. You may add to those you possess (Bambusa Metake and B. Maximowiczi), B. falcata, also known as Arundinaria or Thalamocalamus, and B. viridi-glaucescns, both strong growing and distinct, especially the latter. Nageia japonica might be grown in warm situations in the West of England, but it is usually grown in a greenhouse. Write to Messrs. Veitch & Sons, Chelsea.

Peaches under Glass (*S. R. W.*).—As a rule the longer the petals remain fresh the better the fruit sets. You will have no difficulty in knowing when this is accomplished, as the flowers that fail to set soon

fall or shrivel. Your crops will probably have set by this time, and syringing may then be resumed. When this is done regularly and effectually in the way that has been frequently advised in our "Work for the Week" column, insects are usually kept in check. Strong fumigations are injurious to Peach trees, and a comparatively light volume of smoke on two or three consecutive nights is the safe plan to adopt when aphides appear. The greatest mistake that can be made is to allow them to become numerous before measures are adopted for their extirpation.

Top-dressing for Vine Borders (*J. C.*).—No manure can be said to be the "best" for all soils and under all circumstances, and not one can make good certain defects in management. As you have used lime, that will effect a change in the soil's constituents, hastening the decay of the farmyard manure, and so liberating matter and rendering available as food what without the lime might remain inert or injurious from becoming sour; indeed the lime will form nitrate through acting on the organic matter, and that is valuable for other reasons than supplying the Vines with lime. Thomson's and other advertised manures are valuable, particularly those that contain potash and phosphorus. Chemical manures are peculiarly efficacious applied to soils containing inert substances.

Melon and Cucumber Houses (*H. T. H.*).—Beds 3 feet wide along each side a central path, afford ample room for soil for growing the plants in, and the path may be 3 feet wide also, though many are narrower, this being a question of individual preference. You can have the path as much wider as you wish (or beds either) if a greater extent of space is desired for the plants, which would cover the roof of a house 12 feet wide or more, as well as one 9 feet. Side lights are not necessary, and if the top four courses of bricks are single, and set in cement, a ledge is formed along the top of the 9-inch or lower part of the wall, on which the bottom row of pipes can rest, the top row being taken above it. We presume you have arranged for bottom heat. As you do not give the slightest indication of the time when the illustrations appeared, we are not able to say whether the numbers are in stock or not. Cannot you state the year in which those figures to which you refer were published? If you can give an approximate date we will try and find them for the purpose of answering your question more explicitly.

Vines from Cuttings—Planting Begonias (*E. J.*).—Naturally the cuttings with eyes or buds would grow more quickly and make good canes sooner than would cuttings from which "all" the eyes were removed. We have not before heard of this latter method of propagating Vines. As soon as you have as many as you require established and growing freely throw the others away. Not a few persons fail in their object by growing far more plants than they require, or for which they lack the requisite convenience for growing well. Tuberous Begonias are usually started into growth in boxes, or in a bed of good soil in a frame. Grown sturdily, and prepared for planting out after all danger of frost has passed, or when Dahlias can be safely entrusted in the open ground. This is generally towards the end of May or in June, according to districts and the weather. Many persons err by starting Begonias too soon, and growing them tall in a warm house before planting them in the beds. April is soon enough for starting the tubers in a cool house or frame from which frost is excluded. They root freely and transplant well when in a compost consisting largely of leaf soil.

Azalea mollis not Expanding (*A Lady*).—This is principally due to defective root action. In some cases the roots are cut to such an extent that they fail to absorb the necessary supply of food for insuring the development of the flowers, or even the retention of the buds. This is not, however, always due to the roots being cut off. If the plants are carefully examined when they are lifted from the ground, it will be observed that, although they have set buds freely, the roots have failed to take possession of the surrounding soil. When the plants are forced annually, some of them invariably get into that condition, and the result is that the flowers, if they do open, fall almost immediately. The evil complained of takes place more generally after warm seasons than moist showery ones. The flowers of some of the plants are often very far advanced in autumn; in fact, nearly ready for bursting. This is prevented by frost, and lifting. The consequence is the flowers fall through the severe check they have received. In some cases the falling of the flowers is due to imperfectly ripened wood. They are very similar in this respect to Camellias, and the flowers expand if the buds do not fall.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*W. Barkham*).—No. 1, Lewis' Incomparable; No. 2, Not known. The insect is Oniscus armadillo, one of the woodlice, and is injurious to plants.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*T. R.*).—1, Dendrobium nobile, similar in colour to D. nobile nobilius, but not such a finely shaped flower. 2, Dendrobium nobile variety in the style of cœrulescens. 3, A poor variety of Cattleya Trianæ. 4, Rhipsalis Cassytha. (*W. S.*).—1, Phalænopsis amabilis. 2, Dendrobium luteolum. 3, Masdevallia Shuttleworthi.

COVENT GARDEN MARKET.—March 28th.

Prices without alteration. Market quiet.

FRUIT.

	s.	d.		s.	d.		s.	d.		s.	d.
Apples, ½ sieve	2	6	to	4	6	Oranges, per 100	2	0	to	5	0
Nova Scotia and Canada barrel	10	0		18	0	Pears, dozen	3	0		6	0
Cobs, 100 lbs.	45	0		0	0	Pine Apples, English, per lb.	0	0		0	0
Grapes, per lb.	3	6		5	0	St. Michael Pines, each	3	0		5	0
Lemons, case	10	0		15	0	Strawberries, per oz.	0	9		1	0

VEGETABLES.

	s.	d.		s.	d.		s.	d.		s.	d.
Artichokes, dozen	1	0	to	2	0	Lettuce, dozen	0	2	to	1	3
Asparagus, bundle	8	0		0	0	Musbrooms, punnet	0	6		1	0
Beans, Kidney, per lb.	1	6		0	0	Mustard and Cress, punt.	0	2		0	0
Beet, Red, dozen	1	0		2	0	Onions, bunch	0	3		0	0
Broccoli, bundle	0	0		0	0	Parsley, dozen bunches	2	0		3	0
Brussels Sprouts, ½ sieve	3	6		4	0	Parsnips, dozen	1	0		0	0
Cabbage, dozen	1	6		0	0	Potatoes, per cwt.	4	0		5	0
Capsicums, per 100	1	6		2	0	,, Kidney, per cwt.	4	0		0	0
Carrots, bunch	0	4		0	0	Rhubarb, bundle	0	2		0	0
Cauliflowers, dozen	3	0		4	0	Salsafy, bundle	1	0		1	6
Celery, bundle	1	6		2	0	Scorzonera, bundle	1	6		0	0
Coleworts, doz. bunches	2	0		4	0	Scakale, basket	1	3		1	9
Cucumbers, each	0	6		0	9	Sballots, per lb.	0	3		0	0
Endive, dozen	1	0		2	0	Spinach, bushel	1	6		2	0
Herbs, bunch	0	2		0	0	Tomatoes, per lb.	1	0		1	6
Leeks, bunch	0	3		0	4	Turnips, bunch	0	4		0	6

PLANTS IN POTS.

	s.	d.		s.	d.		s.	d.		s.	d.
Aralia Sieboldi, dozen	6	0	to	12	0	Fuchsia, dozen	0	0	to	0	0
Arum Lilies, dozen	9	0		15	0	Genista, per dozen	6	0		12	0
Arbor vitæ (golden) dozen	6	0		9	0	Hyacinths, dozen	5	0		10	0
Azalea, dozen	24	0		42	0	Hydrangea, dozen	0	0		0	0
Cineraria, dozen	8	0		12	0	Lilies Valley, dozen	18	0		24	0
Cyclamen, dozen	12	0		24	0	Lilium lancifolium, doz.	0	0		0	0
Dielytra, per dozen	12	0		18	0	Marguerite Daisy, dozen	9	0		12	0
Deutzia, per dozen	6	0		9	0	Myrtles, dozen	6	0		12	0
Dracæna terminalis, doz.	30	0		60	0	Narciss, per dozen	8	0		10	0
,, viridis, dozen	12	0		24	0	Palms, in var., each	2	6		21	0
Erica, various, dozen	9	0		18	0	Pelargoniums, dozen	12	0		18	0
,, ventricosa	18	0		24	0	,, scarlet, doz.	6	0		9	0
Euonymus, in var., dozen	6	0		18	0	Poinsettia, dozen	0	0		0	0
Evergreens, in var., dozen	6	0		24	0	Solanum, dozen	9	0		12	0
Ferns, in variety, dozen	4	0		18	0	Spiræa japonica, doz.	9	0		15	0
Ficus elastica, each	1	6		7	0	Tulips, dozen pots	6	0		9	0
Foliage Plants, var., each	2	0		10	0						

CUT FLOWERS.

	s.	d.		s.	d.		s.	d.		s.	d.
Abutilons, 12 bunches	3	0	to	6	0	Lilies, White, 12 bunches	0	0	to	0	0
Anemone (Fulgens), 12 bunches	3	0		6	0	,, Orange, 12 bunches	0	0		0	0
Anemones (French), 12 bunches	2	0		4	0	Lily of the Valley, 12 sprays	0	6		1	0
Arum Lilies, 12 blooms	4	0		6	0	Mignonette, 12 bunches	3	0		6	0
Azalea, 12 sprays	0	6		1	0	Narciss, white (French) 12 bunches	2	0		4	0
Bouvardias, bunch	0	6		1	0	Narciss, various, 12 bchs	3	0		6	0
Camellias, 12 blooms	1	0		4	0	Pelargoniums, 12 trusses	1	0		1	6
Carnations, 12 blooms	1	0		3	0	,, scarlet, 12 trusses	0	6		0	9
Chrysanthemums, 12 bchs.	0	0		0	0	Primroses, 12 bunches	1	0		3	0
,, 12 blooms	0	0		0	0	Primula (single), bunch	0	4		0	6
Cyclamen, 12 blooms	0	6		1	0	,, (double), bunch	0	9		1	6
Daffodils, Double, 12 bchs	3	0		6	0	Roses, Red, 12 blooms	2	0		6	0
,, Single, 12 bchs	3	0		9	0	,, (indoor), dozen	3	0		4	0
Daisies, 12 bunches	2	0		4	0	,, Tea, dozen	1	6		4	0
Epipbyllum, 12 blooms	0	4		0	6	red, dozen (French)	1	6		3	0
Eucharis, dozen	4	0		6	0	,, yellow	3	0		6	0
Gardenias, 12 blooms	4	0		8	0	Snowdrops, 12 bunches	1	0		3	0
Hyacinths, Roman, 12 sprays	0	6		1	0	Spiræa, bunch	0	6		1	0
,, French, 12 bunches	2	0		4	0	Stephanotis, 12 sprays	0	0		12	0
Lapageria, coloured, 12 blooms	1	0		1	6	Tropæolum, 12 bunches	2	0		3	0
Lilium longiflorum, 12 blooms	6	0		9	0	Tuberoses, 12 blooms	2	0		3	0
Marguerites, 12 bunches	2	0		6	0	Tulips, dozen blooms	0	6		1	0
						Violets, 12 bunches	1	0		1	0
						,, (French), bunch	1	6		2	0
						,, (Parme), bunch	2	0		3	0
						White Lilac, per bunch	5	0		6	6



RESULTS.

Erroneous impressions of the action of chemical manures are still very prevalent, and it is generally found that the more ignorant a farmer is about a matter of such vital importance to him, the more positive is he in his assertions about it. We have been assured that such manures eventually so clog the pores of the soil that it becomes practically worthless; that they are so "forcing," that if the use of them is persisted in for three or four years the soil is robbed of all its natural fertility; that they excite growth of abnormal vigour, which absorbs all the manurial constituents to be found in the soil, leaving it practically barren and unfit to produce another crop of any sort. Such postulates are all based upon mere assertion, proof of any weight never being forthcoming in support of them, so that we may be told they are unworthy of

notice. Yet we cannot regard anything that is a hindrance to progress as a trifle to be ignored, and there is one very general error in particular to which we desire to call attention now.

If we were to ask, Is there a residue of any manure left in the soil after the crop for which it is used is harvested or cleared off the land? we should probably be told that there is when farmyard manure has been used, but that artificial manure, as it is termed, is either exhaused by the crop or washed out of the soil by heavy rains in winter. Well; but we do not always get heavy rains in winter, and if we do we are convinced that the proportion of loss in fertility is not nearly so great as is often supposed. In the Norfolk experiments last year upon Barley after Swedes, proof, clear and unmistakeable, was afforded of the exact proportion of unexhausted manure in the soil. The Swedes were manured with 4 cwts. of bone flour, 1 cwt. of sulphate of ammonia, and 1 cwt. of gypsum per acre, and all the roots and tops were drawn from the land. Of thirteen trial plots, two had no manure, with the remarkable result of, in one case, a yield of thirty-six bushels of marketable corn per acre, weighing 56 lbs. per bushel, and with a market value of 33s. per quarter, and in the other, a slightly inferior yield of thirty-four bushels of head corn, weighing 54 lbs. per bushel, and worth 34s. per quarter.

In connection with this series of experiments we may mention here that where mineral manures, superphosphate and potash, were applied alone nothing was added to the yield over that of the unmanured plots, but the use of 1½ cwt. nitrate of soda gave 5 bushels extra per acre, at a cost of about 3s. 6d. per bushel. Muriate of potash with 1 cwt. nitrate of soda also gave 5 bushels extra per acre at a cost of about 4s. per bushel. Superphosphate with nitrate of soda gave 9 bushels extra per acre at the low cost of about 2s. per bushel. The highest increase was obtained by the use per acre of 2 cwt. nitrate of soda, 2 cwt. superphosphate, and 1 cwt muriate of potash, which gave 14 bushels more Barley per acre than the unmanured plots. The soil of the field is light and of medium quality, nearly 2 feet of surface soil resting upon a substratum of reddish sand.

In another series of experiments upon Barley to test the value of unexhausted residue of manures applied in 1886 for Mangolds, it was found that the residue from 3 cwt. superphosphate, 4 cwt. fish guano, and 1 cwt. muriate of potash was fully as valuable as that from twenty loads of farmyard manure, the quantity of head corn upon the former plot being 43·87 bushels, while upon the latter it was exactly 43 bushels, and the market value of the corn from both plots was 33s. per quarter.

A common result of such experiments is more and more proof of the superiority of nitrate of soda to all other forms of nitrogen. In the Sussex experiments, in answer to the question, "Will not the application of nitrate of soda impoverish the soil and render it unfit for cultivation in future years?" it was shown by results from farmed-out land at Haywards Heath that without nitrogen, neither air nor water, neither the food in the soil nor the heat of the sun, could be utilised in producing a heavy crop, but so soon as nitrogen was supplied all these elements were healthfully utilised, and, being utilised, resulted in a profitable crop. The fact being that they are utilised, the farmer, if he is to farm rationally, will, in order to continue the process of profitable cropping, return a proportion of that profit to the soil in the form of more nitrogen (nitrate of soda), and he will also consider that in growing these heavy crops he has to add not only nitrogen, but part of those mineral ingredients—potash and phosphates—which former judicious treatment has utilised.

Probably it is inattention to this latter point that has given rise to the idea that nitrogen, one of the best plant fertilisers, exhausts or "scourges" the land. That belief is supported by irrelevant analogy with animals, in whom stimulants produce extraordinary results, to be followed only by corresponding depression. The analogy is made in forgetfulness of the fact that work by an animal means waste of tissue permissible only to a certain degree, when—if life is to continue—it must be followed by reparative processes; whereas growth by a plant means no waste, but merely a conversion into plant matter, chiefly of air and water, with but a minute proportion of the soil, which serves more as a medium for the ramification of the roots than for the provision of mineral food, most of which must be provided by manure.

The knowledge gained by us under the Sussex experiments by Professor Jamieson has enabled us to boldly grapple with the exhausted land of farms falling upon our hands year after year, for we know that such land requires no rest. He taught that the notion of rest was a bogie set up by ignorance; that perpetual cropping is rational farming, which must prove profitable if done intelligently; that towards this system advancing agriculture must tend, and by this system—the most profitable cultivation—the agriculture of the future will be characterised.

WORK ON THE HOME FARM.

Never were the resources of flockmasters put to a more severe test than they are this spring. To begin with, many of them were so badly off for food that heavy purchases have been made for several weeks, and with the growth of the lambs a proportionate additional outlay was unavoidable. A forward spring would therefore have been a great boon, but present prospects give promise of very little food upon pastures till May. Under such adverse conditions valuable lessons in flock management may be had at farms where there is a really intelligent system in force. We have in our rounds of late seized every opportunity of calling at different farms to see what is being done, to compare notes with our friends, and certainly to pick up crumbs of knowledge. In this way much that is interesting in practice, good and bad, comes under our notice, and the results of foresight and care, or the reverse, are before us. On one very large farm, where the practice is easy-going and about as careless as it can well be, we found the flock in sad plight, for the ewes were so low in condition that they had hardly enough strength to bring forth the lambs, and the lambs were small and weak. The mortality among both sheep and lambs was considerable, as many as fourteen ewes having been lost in one day. Pleasant indeed was it to turn from so sad an example of mismanagement to a really well cared for flock of some 300 ewes. Lambing was in full swing under most unfavourable conditions of weather, for it was blowing hard from the north-east, with the thermometer a little below freezing point, and snow was falling so fine and hard as to be almost blinding from the force with which it was driven before the bitter wind. Shelter of every kind had been turned to account for the sheep. The large sheep-yard, with its low thatched roof shedding running right round it, had occupants in every crib. Barns, cart and waggon lodges, were all filled with sheep, and even the waggons were made to afford shelter, by heaping straw upon them, drawing them into line, and putting high thatched hurdles along the windward side of them, so as not only to break off the wind but to afford comfortable quarters beneath the waggons for lambs and sheep. Ample supplies of chaff, roots, and corn were stored close by; the ewes were strong, healthy, well-conditioned animals, and the crop of lambs was satisfactory. Two hundred and fifty of the ewes had lambed in a fortnight, so that the lambing would only practically extend over a period of three weeks. On every hand we saw pleasing evidence of intelligence, energy, care, and thrift, and the farmer himself was as remarkable as his surroundings, as he walked about with us heedless of weather, a hale sturdy veteran of over threescore years and ten.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE. 1888. March.	9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of soil at 1 foot.	IN THE DAY. Shade Temperature. Max.	IN THE DAY. Shade Temperature. Min.	IN THE DAY. Radiation Temperature. In sun.	IN THE DAY. Radiation Temperature. On grass	Rain
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 18	30.174	30·8	28·7	N.E.	37.7	35.3	30.0	28.4	19.0	—
Monday..... 19	30·052	29·4	26·8	N.	36·8	35.5	24.1	33.8	22.7	0.212
Tuesday .. 20	29·97	33·8	32·6	N.	36·2	36.9	29.1	6.3	28.1	—
Wednesday.. 21	30.2 8	34.2	34.1	N.E.	3 .1	46 8	31.1	19.6	213.	—
Thursday 22	30. 21	36.4	34 7	S.	36.1	47.3	28 1	54.3	21.7	0.270
Friday 23	29·864	41.6	4 .2	S.E.	36.8	42.4	3 1 1	45.5	35 4	0.034
Saturday 24	29.435	37 2	34.5	N.E.	37 4	46 4	33 8	36.4	3 .8	0.222
	29.897	3 .1	33.2		36.7	41 5	3 9	63 8	2 .4.	0.772

REMARKS.

18th.—Generally bright in afternoon, but b e k and cold throughout.
19th.—Cold, bleak, and sunless. S ight s ow began about 5 P.M., and by 9 P.M. was half an inch deep, and co ntinued to fal .
20th.—Snow early, and lift 10 A.M., the depth at 9 A.M. being 2 inches; dull all day.
21st.—Fine, b ight and ple sant, and much warmer.
22nd.—Sleet shower about 9 A.M.; wet morning; dull afternoon.
23rd.—Fo e from 1 A.M. to 7 A.M., and slightly foggy in the morning; dark with high fog from 10 A.M. to 1.30 A.M., and dull and damp all day.
24th.—Cloudy morning; dark, w th high fog f om 10 A.M. to 11 A.M., necessitating gas, then fine and bright; rain in the evening, and flakes of snow at 9.50 P.M.

An unsettled wint y week. Temperatu e about six degrees below the average, and four degrees be ow that of the preceding week.—G. J. SYMONS.

CAMELLIAS.

CAMELLIAS have had a long term of popularity, and though perhaps the demand for collections of varieties has decreased somewhat in the past few years their utility is still widely recognised, and for decorative purposes the flowers are supplied to the florists and markets in far greater numbers than ever. Hardwooded plants have been neglected in favour of the more easily grown softwooded plants in many establishments where it has become a necessity that a large annual supply of flowers be unfailingly produced, but there is no reason why Camellias should be included amongst the uncertain plants to be avoided. With ordinary attention they are by no means difficult to grow. They are handsome as specimen plants whether in flower or not, as the glossy rich green foliage is at all times beautiful, and when large well established healthy specimens are obtained their wax-like symmetrical flowers can be cut by hundreds either for home use or for sale. There is a steady advance in the demand for Camellias, and few plants are more worthy of increased attention.

Before referring to the best varieties in cultivation at the present time, a glance at the long and gradually developed history of the Camellia in cultivation may not be without interest to some readers. The first published description of Camellia japonica of which we have any definite knowledge was that by the botanist Petiver, which appeared in 1702 with an illustration of the plant under the name of Thea chinensis, followed by Kæmpfer's description ten years later. These notices attracted the attention of botanists and amateur patrons of horticulture, with the result that the plant was introduced probably both to the Continent and this country, but the exact date is not known. The single red Camellia is said to have been cultivated by Robert James Lord Petre before 1739, and the authority for this statement named in Aiton's "Hortus Kewensis" is Edward's "Birds," where it seems to be mentioned as Rosa chinensis. From that time until the publication of Thunberg's "Flora Japonica" in 1784, little appeared concerning the Camellia, and strangely enough it is not included in Phillip Miller's "Gardener's Dictionary," though it was subsequently published in Martyn's edition. Thunberg describes both C. japonica and the small-flowered C. Sasanqua (which is figured), and remarks respecting the former that many varieties are cultivated in Japan, single and double, white, red, and different colours. The first edition of Aiton's "Hortus Kewensis" was published in 1789, and C. japonica was then included in that collection, but no varieties are named. According to the particulars accompanying a figure of the Double White (alba plena) in Andrew's "Botanists' Repository" in 1799, this fine old variety, together with the double striped, was imported from China in 1793 by Capt. Connor to the garden of a Mr. T. Slater, and when the figure was taken the best plant was in Sir Joseph Banks' garden. It is worthy of remark that at the time named Camellias were grown in a hothouse, but cultivators soon found this was unsuited to the plants, and in a few years we read of some being placed out of doors. An excellent flower is represented in the plate, as well formed and full as the best of the present time. A good illustration was also given in the following year (1800) of the Double Striped, in 1802 one was published of the Double Red, which was introduced by Mr. R. Preston of Woodford in 1794, and "The Botanical Magazine" for 1796 (t. 42), included a plate of the Single Red Camellia, the first variety known in England.

At the commencement of the nineteenth century there were thus at least four recognised and named varieties in garden cultivation here, but though Martyn's edition of "Miller's Dictionary" was published in 1807 it only mentions the three species—japonica, Sasanqua, and oleifera—without referring to the varieties. The second edition of Aiton's "Hortus Kewensis" (1812), however, names ten varieties—the Single Red, Semi-double Red, Middlemist's Red, Myrtle-leaved Red, Anemone-flowered or Waratah, Pæony-flowered, Double-striped, Blush, Buff, and Double White. One of these—The Blush—better known as Lady Hume's Blush ("Botanical Register," t. 112), was introduced in 1806, and named in honour of Lady Amelia Hume, Wormleybury, Herts, and became a great favourite in all the early collections; it is, indeed, occasionally seen now in old gardens. The flower is somewhat star-shaped, with the petals overlapping each other in several series radiating from the centre, and not regularly imbricated, as in alba plena for example. It is of a delicate blush tint, distinct, and pretty, but for perfection of form cannot be compared with the more recent productions. Anemoniflora or the Waratah was introduced to the Royal Gardens, Kew, in the same year as the last named, and was figured in the "Botanical Magazine" (t. 1654) from a plant at Mr. Griffins' in South Lambeth. This also is a very distinct variety, the flowers having six broad guard petals and a dense tufted centre of small petals regularly arranged somewhat in the manner termed equitant by botanists, and the colour is a deep red. Some other varieties are found in collections under the name of the Waratah, but the general form is the same, the colour differs slightly, and the outer guard petals are more evenly filled up.

The Myrtle-leaved Camellia, a little-known slender-growing variety, reached Kew in 1808, and C. Sasanqua in 1811. The last-mentioned is an interesting plant, though it has not been concerned in the production of the present race of Camellias. It is noted and figured in Staunton's account of Macartney's Embassy to China, the following appearing in Stockdale's edition (1797):—"The petals of this plant, called by the Chinese Cha-whan, or Flower of Tea, from their resemblance to each other, and likewise because the flowers with those of the Arabian Jessamine are sometimes mixed amongst the Teas in order to increase their flavour. Camellia Sasanqua, which grows upon the tops and sides of mountains, is assiduously cultivated. It bears a nut from which is expressed an edible oil equal to the best imported from Florence." In a list of flowers used for imparting fragrance to Teas, published many years after by Mr. Robert Fortune, this Camellia is not mentioned, and it is probable that others of a more suitable character had been substituted. It may also be added that the concluding remarks of the quotation given seem to refer to Camellia oleifera, which was introduced by the Macartney Embassy, but subsequently lost, and re-introduced by Capt. Nesbitt in 1820.

The earliest English-raised seedlings from seed ripened in this country of which we can obtain any information are the one named Wiltoni, that is said to have been flowered by Mr. Knight in 1814, and the single white raised at Tooting about the same time; but as seeds are readily produced by some of the single and semi-double varieties, other horticulturists may have succeeded previously to the date named. Certainly in three or four years afterwards at least eight named seedlings were in commerce as the results of crossing the introduced varieties. Returning to the chronology of the imported varieties we find that in 1816 C. maliflora, a slender growing form of the Sasanqua type with double pink flowers, was sent to Mrs. Palmer's garden, Bromley, Kent, by Capt. Rawes, who, by the way, brought from China at the same time Primula prænitens, now such an important garden plant under the name of P. sinensis. According to another account the Primula was introduced with Camellia reticulata in 1820, but by the same Captain. In the same year, however, a much more beautiful

Camellia than C. maliflora made its appearance in Mr. Colville's Nursery, King's Road, Chelsea—*i.e.*, the Fringed White (japonica fimbriata). This handsome variety is still a favourite in numbers of gardens, the white petals being evenly and finely fringed. The Various-flowered Camellia was sent to Kew about the same time, but it is not known who introduced fimbriata.

Messrs. Chandler and Buckingham at Vauxhall in 1818 and subsequent years endeavoured systematically to improve the race of cultivated Camellias by crossing and the selection of seedlings. In 1819 they had obtained two very distinct varieties in corallina and Chandleri, both of which still retain a place in collections, a sufficient indication of their merit. Chandleri resulted from a cross between the Waratah and the Double Striped. A few years later the same firm issued their "Camellia Britannica," containing eight coloured plates of English-raised seedlings, comprised, in addition to the two named, Aitonia, Altheæflora, insignis, florida, Anemoniflora alba, and Rosa-sinensis. The Vauxhall nursery was then, and for many years subsequently, famed for its collection of Camellias, and very much of the public attention accorded to these plants was due to the efforts of Messrs. Chandler and Buckingham to popularise them, and also to their books, but especially the larger and beautifully illustrated work issued by Messrs. Alfred Chandler and W. B. Booth.

It has been already incidentally noted that a single white Camellia was raised at Tooting by Messrs. Rollisson & Sons in 1814, which, owing to its free seeding habit, became the parent of many fine double and coloured varieties. The plant, nevertheless, seems to have remained very scarce for some years, as at a meeting of the Society of Flora at Brussels, February 19th, 1825, a medal of honour was awarded to M. Vandermaelin for a specimen on account of its rarity. In 1824, Mr. Press, gardener to E. Gray, Esq., Hornsey, raised a number of seedlings from a cross between this variety and the semi-double red, several of which became great favourites. This was especially the case with Press's Eclipse, a double white with pink stripes, that for a number of years held a prominent place amongst the popular Camellias.

The introduction of varieties still continued, but two were added in 1820 and 1823 respectively, which were assigned the rank of species—namely, C. reticulata and C. Kissi, both very distinct and attractive. C. reticulata has somewhat the habit of C. japonica but less bushy, more straggling in style, with long tapering dark green leaves, and large semi-double rosy crimson flowers varied with a darker shade. It was introduced by Capt. Rawes at the time named. A plant flowered in 1826, and it was figured in the "Botanical Register" of the following year (t. 1078). A double variety of this was sent to England by Fortune a long time afterwards, and was figured in the "Botanical Magazine" in 1857 (t. 4976) from a specimen at Bank Grove, Kingston, 13 feet high with a spread of 16 feet, from which 2600 flower buds were removed and about 2000 allowed to remain. It is remarkable for its free flowering character, and the original plant now filling a frame in the Royal Horticultural Society's Garden at Chiswick annually produces an enormous number of flowers.

The fragrant Camellia Kissi was introduced from Nepal in 1823 by Mr. Samuel Brookes, Balls Pond, and it was thought at one time that a distinct race of fragrant Camellias might have been produced by its aid. If any experiments were undertaken in that direction they do not appear to have been very successful, for we find no records of any varieties so produced. The flowers are small, white, and pleasantly but not powerfully fragrant. C. japonica imbricata was imported for the London Horticultural Society by Mr. J. D. Parks in 1824, and flowered in 1827, when its large handsome effective crimson blooms immediately secured it a number of admirers, and has insured it a place in the best collections until the present day. Sweet's "Hortus Britannicus" was published in 1826, and in that four species are enumerated, twenty-seven imported varieties, and eight English seedlings. In the "Horticultural Society's Transactions" for 1830, Mr. William Beattie Booth, A.L.S., Garden Clerk to the Society, contributed a descriptive list of the Camellias then known, naming twenty-five varieties, and the same writer furnished the descriptions for the admirable illustrations of Camellias by Mr. Alfred Chandler, issued between 1830 and 1832. This forms a valuable work in one volume, containing forty accurately drawn and coloured representations of the best Camellias known, and that it is still regarded as a creditable production can be judged from the fact that a copy was recently sold, as noted on page 242, for £4. From this time the advance of Camellias, both here, on the Continent, and in America, was rapid in the extreme, and to illustrate the demand for the flowers in New York, Loudon published a letter, dated January 10th, 1832, which stated that Pine Apples were selling for 3d. and 4d. each, while expanding buds of Camellias were sold at a dollar each, and a list of applicants was kept who were supplied in rotation as the buds expanded. Florists are not often troubled much in this way now.

Loudon's "Hortus Britannicus" for 1830 enumerates forty-seven varieties of Camellia japonica, while in the supplement for 1850 seventy-one more varieties are added, no less than sixty-three being seedlings, a good indication of the increasing attention they were receiving. It is remarkable, however, that Mr. C. M'Intosh of Claremont Gardens estimated about 200 varieties were grown in England in 1838, and states that M. Parmentier of Enghien, Belgium, had 400 varieties. Whether these statements are correct or not, I have a catalogue of Camellias issued by M. Makoy of Liège before the year mentioned above, in which 290 varieties are named, ranging from 2 to 100 francs each, plants of the well known C. tricolor being priced at the latter amount. From this time we have been chiefly indebted to continental horticulturists for the new varieties, and especially to cultivators in Italy, where much attention has been paid to the improvement of the Camellia. Scores of novelties have been sent thence in the past twenty years, and the best have obtained a place in the select lists issued by English nurserymen, for no one now attempts to include all the varieties known. American horticulturists have contributed to the development of the Camellia, and an extremely distinct strong-growing variety named Floyi is believed to have been one of the earliest seedlings raised there, dating from about 1820, and it was included in Makoy's list already noted. More recently we are indebted to the late Mr. Hovey for several handsome varieties, one of which, C. H. Hovey, ranks as one of the best formed and brightest coloured Camellias in cultivation. Belgium has obtained the name as the Camellia-growing country, as there some millions are grown every year to meet a wide European demand, constituting, with the Azaleas, a large portion of the nursery trade. One of the Belgian nurserymen, M. Verschaffelt, also, some years ago, issued the finest illustrated monograph of Camellias yet published. It is entitled "Nouvelle Iconographie des Camellias," and it appeared during the years 1848 to 1860 in twelve volumes with forty-eight plates each. The famous variety C. Donckelaari (fig. 37) is said to have been introduced by Van Siebold from Japan about 1833, being named in honour of M. Donckelaar of the Botanic Gardens, Louvain, and distributed by M. Jacob Makoy.

In Great Britain all the larger nurserymen devote some space to Camellias; Messrs. Veitch & Sons, Chelsea, and Mr. B. S. Williams, Upper Holloway, especially, but Messrs. W. Paul & Son, Waltham Cross, have made a specialty of the plant for many years, and some notes on their collection will be found on page 280. It is rather remarkable that of the hundreds of varieties raised or introduced only fifteen have been certificated by the Royal Horticultural Society, and several of these can by no means be considered as the best now obtainable, but may be worth recording in connection with these historical notes. The varieties that have been certificated are as follows:—Contessa Lavinia Maggi (Veitch), March 19th, 1862; Napoleon III (Lee), March 18th, 1863; Filippo Parlatore (Veitch), March 31st, 1863; Reine des Beautés (Standish), March 7th, 1865; and reticulata flore pleno from the

same exhibitor and on the same date ; Amelia Lechi (Bull), March 20th, 1866 ; Triomphe de Loddi (Veitch), April 3rd, 1866 ; Princess Mary (Salter), April 17th, 1866 ; Lavinia Maggi rosea (Bull), April 16th, 1867 ; Kelvingtoniana (Baxter), January 19th, 1869 ; La Maestosa (Bull), February 16th, 1869 ; Princess Alexandra (Henderson), April 16th, 1873 ; C. M. Hovey and Mrs. A. M. Hovey (Hovey), March 25th, 1875 ; and Commendatore Betti (Williams), March 24th, 1885.

Though so many varieties have been obtained in different ways the old Double White still remains unsurpassed in symmetry of form, but in the past few years the single and semi-double varieties have come into favour as being lighter and more suitable for arranging with other flowers.—C.

VEGETABLES FOR EXHIBITION.

GLOBE ARTICHOKES.

A good dish of fine succulent heads ought to be a strong point in every collection. They should either be grown well or not at all, as it is very certain the miserably dry heads are not appreciated by either a judge or cook. The ground for them ought either to be enriched to a depth of about 2 feet. Five or six years is quite long enough for plants to be grown on the same ground, and in our case a large space is given up to them, one or two rows being rooted up every spring and as many new rows planted. Old plants produce heads early in the summer. It is the young plants that usually produce the finest heads late in July and during August, or while most shows are held. Towards the end of March or early in April a few rooted suckers about 12 inches long may be placed in 6-inch pots, or larger if need be, and set on a gentle hotbed till well rooted, being hardened off and planted out before they become seriously root-bound ; they will be the first to produce serviceable heads. Others taken off the old plants at the same time may be planted out at once for succcession. Every pains should be taken to induce a quick and strong start. The Artichokes ought to be grouped in threes, the groups not less than 3 feet apart each way, being firmly fixed in the soil as deeply as possible without actually burying the heart of the plants, giving water when needed for promoting free growth. Before hot, and may be dry weather sets in, the ground about the plants should be heavily mulched with strawy manure, and occasional thorough soakings of water will greatly assist in the formation of fine heads for exhibition. Three strong growths are always ample for each group or old stool, and when they are drawn from for propagating purposes the three strongest and best placed suckers should be reserved and all the rest stripped off. At the same time remove much of the surface soil down to the roots, returning this after a liberal dressing of manure has been applied. Those that have been long on the ground may well receive a soaking of sewage or liquid manure in the spring and summer.

If seedling plants could be relied upon to come true to name, these would be found to produce the finest heads. Unfortunately it often happens that 50 per cent, or even a greater per-centage, are little better than Cardoons, producing large branching flower stems and a great profusion of spiny but quite useless flower heads. Those with plenty of garden space, however, may feel disposed to raise a few seedlings, and will perhaps be rewarded with a few fine varieties. The seed may be sown early in April in patches 3 feet apart each way, and the seedlings eventually thinned to three plants in each instance. Seedlings raised in the open air arrive at a bearing stage rather late in the season, and those who want them early should sow seed in a pan of fine soil in March or April in gentle heat, and treat them for a time as half-hardy plants. The Green Globe is the best, being superior to the Purple Globe.

CELERY.

Unless Celery is extra well grown it is unwise to include it in a collection of vegetables shown either in July or August. In the neighbourhood of Sherborne, Dorsetshire, any quantity of grand Celery is seen at all the shows, one of the most successful growers being Mr. G. H. Copp, gardener at Holnest Park, Sherborne. To Mr. Copp I am indebted for several serviceable hints upon growing Celery for exhibition, and which he has not the slightest objection to being made public. For the earliest shows a vigorous-growing white variety should be grown, and on the whole I am of opinion that Wright's Grove White is the best. The seed should be sown late in January or in February, thinly, in a pan or pot, and set or plunged in gentle heat. As soon as the seedlings are large enough to handle they should be pricked off thinly in a pan or pans of good fine soil, and set on a shelf near the glass. Being properly attended to they soon become sturdy and well rooted, and ought then to be placed singly into 3-inch pots and returned to the shelf. Before they are badly root-bound they must be shifted into 9-inch pots, a suitable compost consisting of loam and decayed manure in equal proportions, a good sprinkling of burnt clay or soil from a "smother" being added to keep the whole porous. All this can be done in an early vinery, and here the plants may remain until the Vines shade them too heavily, when they ought to be taken to a shelf in a cool house to harden prior to being set in the open air. By the middle of May the plants will be ready to stand in the front of a house.

For their final reception select a sheltered yet open place, say about 8 feet square. This will, when prepared, hold twenty-five plants, which number will in most cases be ample for the early shows. At each corner drive in a short stout stake, and one midway between them, to these being nailed a strong wide board. Next remove a depth of about 2 feet of the inside soil, and supply a compost similar to that in which the plants were last potted. In this the Celery should be planted the first week in June, being disposed 18 inches apart each way. They ought to be in a moist state at the roots when planted, and should have the soil trod very firmly about them, this being necessary in order to cause the growth of solid leafstalks, looseness of the root run being liable to encourage a "pipy" or hollow growth. From first to last Celery ought not to suffer by want of water, and when well established copious supplies of liquid manure should be given about twice a week. When growing strongly insert a stout stake to each plant, and tie the leaves lightly to these.

The blanching is the next consideration, and is a very simple proceeding compared with the other details. About five weeks before the Celery is wanted for exhibition, carefully wrap up the stems and much of the foliage in several folds of brown paper, so as to effectually exclude the light, and out of this the "sticks" turn in a perfectly blanched and beautifully clean condition. For the later shows Carter's Incomparable Crimson and Major Clarke's Solid Red are very suitable, and wonderfully fine samples of these and other red Celeries are frequently to be seen in the autumn hereabouts. The seed may be sown early in March, and the seedlings pricked off on a firm shallow bed of manure placed on a hard bottom, or exactly as the bulk of Celery is raised for ordinary purposes. Transplant with a good ball of soil and manure about the roots. They may well be grown in wide trenches prepared as advised for the earliest and given the same room, or be disposed 12 inches apart in a single trench. The other details are much the same as already given, the blanching also being carried out in much the same manner. Mr. Copp never thinks of blanching by earthing, but the late plants are enclosed in canvas, and bracken or dry litter is banked around them to prevent its being frozen. The fine Celery exhibited in the midlands by cottagers is usually grown on the surface of the ground, or only just deep enough to render watering an easy matter, and with the aid of soot water, sewage and occasional sprinkings of salt, wonderful growth is made. The blanching is always done with brown paper, or some substitute for it, and by no other means can such fine clean stalks be obtained. I have also seen very good Celery grown with the aid of 5-inch draining pipes. These are placed over the plants early, and effectually exclude the soil banked up around them from reaching the hearts, worms and grubs also being less liable to disfigure the stalks.

CARROTS.

A good dish of Carrots, although not exactly indispensable in a limited collection of vegetables, is yet frequently quite a feature in them, and I would always stage them if fairly large, of good form, richly coloured, and clean. Judging from what we meet with in the neighbourhood of London, the sandy peaty soil prevailing in some parts of Surrey just suits the Carrot. At any rate it is impossible to surpass the productions of Surrey gardeners and market growers. By good culture, however, it is possible to equal them, and that is all that is needed. It is the heavy clayey soils, such as prevail in the Weald of Kent and Sussex, and which we also have to contend with, that are the most unsuitable for Carrot culture. They will grow strongly enough in such soils, too much so, in fact, but land that binds badly, and which also cracks in all directions, produces more wedge-shaped ugly roots than we care to lift when searching for a good dish for exhibition. The land ought to be in such a free-working order as to admit of roots being drawn from it in almost any weather. This may be partially accomplished by early digging, the ground being then well pulverised by the action of frosts, wind, sunshine, and rain. Supposing the ground is dug late in the autumn in February, it may well receive a liberal dressing of any fine sandy soil, notably that sifted from a heap of old potting soil. Add to this a heap of burnt garden refuse, leaf soil, and spent tan, and again dig over the ground for further pulverisation. When the time arrives for seed-sowing, fork the ground so as to well mix that added with the now finely separated surface soil, and a good seed bed should be the result. On no account should heavy land be meddled with in

wet weather; better by far delay both digging and seed-sowing till more favourable weather is experienced. If a good sized plot, or enough ground for all the Carrots needed on the place, cannot be prepared in the manner described, it may yet be possible to take extra pains with enough for a few long or several short rows. Over-rich, or manure-sick land, will not grow good Carrots, these also being usually infested with the insects most injurious to the crop. Such ground may frequently be improved by bastard trenching or double digging, the shovellings brought up and well mixed with the surface correcting this. Trenching, as a rule, is not necessary for the production of good Carrots, newly trenched land frequently having a tendency to grow them far too large. Supposing the ground has been manured and trenched for Potatoes, this would leave it in excellent condition for Carrots. Where the maggot is very troublesome, wood ashes should be freely dusted in the drills when the seed is sown, and surface dressings of soot are not thrown away.

For the early shows, or those held in May, June, or July, I prefer the Nantes Horn. Veitch's Model, also belonging to the Horn section, is also fine for exhibition. It is scarcely so long, but is thicker than the Nantes Horn. As a rule the best roots of these will be obtained from the beds sown on slight hotbeds early in the year and for a time covered with glass These may be drawn from for several weeks, a few being left thinly over the bed to grow to their utmost, and very handsome and richly coloured they usually are. Very good roots of these varieties may be grown on a warm border. The drills for them should be drawn about 10 inches apart, and the plants gradually thinned out till they are left about 6 inches apart. For the August and later shows the New Intermediate or Veitch's Matchless is the best, this being a decided improvement in every way on the old James' Intermediate. The drills for this, and also the Long Surrey, should anyone prefer this for the late shows, ought to be 15 inches apart, and the thinning out must be commenced as soon as they have formed rough leaves. Finally they may be left about 8 inches asunder, a greater space only encouraging the production of coarse roots. I ought perhaps to add that I consider it unwise to sow the late varieties before the first week in April, and that a summer mulching of short grass from the mowing machine, leaf soil, cocoa-nut fibre, or fine peat, is preferable to anything in the shape of waterings given in dry weather.—EXHIBITOR.

ARTIFICIAL MANURES.

WITHOUT directly contradicting his previous assertions, Mr. H. Dunkin has unwittingly supported my opposition to his ideas when he advises "food that is varied in its chemical constituents according to the nature of the plant that is to receive it." Exactly so, and if he will only have the goodness to read carefully through my previous article he will find that the gist of my argument is to give only food constituted according to the nature of the plant; but your correspondent seems to think that this is a well nigh hopeless task, as he says "A knowledge of chemistry may enable us to form various manures which are likely to supply the most suitable food, yet it is only by practical experience and close observation we can find out whether these anticipations are correct." I must certainly oppose the use of the word "may" in the above quotation, and offer a substitute in the word "undoubtedly," as I consider a knowledge of even the rudiments of chemistry one of the chief items of every gardener's education; and as to "only practical experience and close observation," why I consider these two words (experience and observation) the whole foundation of successful gardening, coupled perhaps with the rather ugly word "failure," for is it not through failure that continued success often ensues?

"But how am I to find out the chemical constituents of plants?" some one says, or in other words, "analyse the ashes?" Possibly a difficulty may arise here, as everyone is not sufficiently advanced in the higher branches of chemistry to perform this delicate operation successfully. Still there are many ways of obtaining the necessary information, for who does not know that the Potato contains more than 50 per cent. of potash, and only about 4 per cent. of lime, while the Cabbage contains but 10 per cent. of potash, and nearly 25 per cent. of lime? and again, the Grape Vine contains them in nearly equal proportions. Granted that these are undisputed facts, cannot they be used to considerable advantage in the preparation of our compost and plant food? For instance, a cultivator ignorant of these facts treats his Vines to a course of Peruvian guano, or some other equally heavy ammonia-laden substance. No doubt he would continue applying it until, as your correspondent puts it, they show signs of becoming gross and unfruitful, when if he were made aware of the cause he would apply some other kind of manure, in the hope that it would contain "a something" the plants were in need of. Still we must think charitably, and hope that he would discover his error, and apply at once manures that he knew for certain contained a large per-centage of potash and phosphates, which solidify and build up the woody tissue; but would it not be better practice to apply the solidifying agents in the first instance, and so forestall the gross and unfruitful state?

I am inclined to think after all the only difference between Mr. Dunkin's practice and what I advocate is, that while he prefers to give the plant a strong stimulant to start it, and then waits for developments, afterwards giving it various compounds as fancy dictates, I prefer to give the plant its food in as complete a form so far as my slight knowledge of chemistry enables me to do so, and instead of inducing a gross unfruitful growth that I know the application of some compounds will cause, I prefer rather to use such as will build up a serviceable tissue from the beginning.

As to the charge of inconsistency, in my endeavours to be brief I inadvertently omitted a saving clause, and, as far as appearances go, must admit the imputation. What I should have said was, "That artificial manures if properly constituted to meet the requirements of the individual species of plants they are then of the utmost utility to the plant grower."

Again, as to my appearing to believe that members of the vegetable kingdom are not similar in some respects to those of the animal kingdom, I might have been more explicit. I intended the sentence, "But such I hold is not altogether the case," should refer to the distaste arising sometimes from other causes besides a long course of the same kind of food. Still I hold there is some analogy between plant life and animal life, and this is what I affirm, "That if the manure or food applied in the first instance is a properly proportioned combination of the elements needed for the plant's or animal's support no diminution of its vigour will ensue even after a protracted application." I may add that I believe both the loss of appetite in plants and animals is caused by unsuitable variety, an excess of one element and insufficiency of another, especially so in the latter, where food, and I may add drink also, that, to use your correspondent's words, is "varied in its chemical constituents," is a great destroyer of appetite. Though change of food undoubtedly in some instances improves the appetite, on homœopathic lines, I suppose that like cures like, yet it cannot be disputed that the plainer in reason both the animal as well as the vegetable is treated the sounder will be the constitution.

As to Mr. Dunkin's idea that earths, acids, alkalies, salts, &c., coming into contact with lime, potash, soda, carbonic acid, or ammonia, and these again coming into contact with other substances unite and form an altogether different compound, I should certainly agree with him. I think I comprehend his meaning, which I take to be that after charging the soil with various chemicals, useful and otherwise, the soil gets into a state known in garden parlance as sour, while the corresponding state in an animal would be called dyspepsical, then for the soil apply an agent in lime to disperse the accumulation of excessive food. However, such matters as renovating old kitchen gardens is a subject by itself for discussion, though I cannot let it pass without giving it as my opinion that instead of a good dressing of lime, which by Mr. Dunkin's own showing must be followed up by the same operation that has partly spoilt the soil—viz., heavy feeding with farmyard manure, I would prefer only a very moderate amount of lime, and with a judicious amount of trenching I should hope to make use of a large proportion of the excessive richness, instead of dispersing it into the air by means of heavy liming.

In reference to the use of nitrate of soda, I am well aware of its rapid action on vegetation, but as I said in my previous article, if these highly stimulating agents are not backed up by something substantial, the plants are apt to become debilitated after its influence is expended, and I do not for one moment dispute the effects produced by Mr. Dunkin on his Erica hyemalis. I have at several times had charge of plants bought in from the market grower, which at the time of purchase looked the picture of health, but they had evidently been treated to a strong stimulant, which eventually left them candidates for the rubbish heap. This, I believe, is the generally prevalent idea respecting the effect produced by nitrate of soda alone, and in only one instance do I know of its deviation from this rule, this being in a series of experiments with different kinds of manures, including bonemeal, native guano, muriate of potash, superphosphate, nitrate of soda, &c., on different portions of a pasture. The results were various, bonemeal giving the least, and the others in various proportions up to nitrate of soda, which gave effect first, and the rather strange part, this portion of the field showed improvement for the longer period than did any other part. Possibly as Mr. Dunkin is an advocate for nitrate of soda he may throw some light on to this rather peculiar case. I have some ideas as to the cause, but will defer them for a time.—M. COOMBE, *Ashton Court Gardens, Bristol.*

THIS subject merits the attention it has lately received in these pages. Cultivators who are so situated that they can readily procure quantities of stable or farmyard manure at all times are fortunate, but the majority of garden owners, especially amateurs, are seldom so favoured. I know many parts where natural manures cannot be bought in sufficient quantity, and all sorts of schemes are started to find fertilisers. Some of these may be useful, but most of them if not hurtful are next to worthless; and better results would be secured by using 1 cwt. of good artificial manure than half a ton, or indeed a ton, of all sorts of rubbish. I approve of converting all kinds of refuse into manure, but I cannot recommend much of it as a full substitute for stable manure. Many small gardens are well cultivated, and those who use most manure have the best produce as a rule, but I have heard many of them say that much of the manure they bought at 3s. 6d. per cart-load did little or no good excepting to assist in opening the soil, and the best growers now employ artificials. Really good artificial manures, such as are advertised, contain the very essence of plant life, and surely it is better to feed vegetation with that which it uses freely and to

advantage than to submit it to materials which it can barely exist on, or are absolutely injurious to the roots or branches. Here we have the command of a good cattle yard for making, but for all that we buy many hundredweights of artificial manure annually, as it is easily applied and excellent in its results. Artificial manures are admirably adapted for use by amateurs, as they can be conveniently stored away in a small space. Plants in greenhouses and conservatories may be surface dressed with them without interfering with the enjoyment of the flowers, and when converted into liquid manure a lady may apply them. They may be used with advantage in three ways: first as liquid, second as a surface-dressing, and third mixed amongst the soil used for potting or sowing or planting in, and if properly applied they will prove highly remunerative and satisfactory.—J. M.

THE ORCHARD HOUSE.

[A lecture delivered at Birmingham on the 13th inst., by T. Francis Rivers, Esq.]

(*Continued from page 257.*)

For gardens where there is not room enough for the 24 feet span the 14 feet will be found very productive and manageable. It will hold two rows on each side, and these should be half-standards and bushes. There will be the same convenience for sheltering trees until the summer, and in every respect, except in size, the houses are the same in management. There remains now to be considered the third form, which I am afraid has caused more disappointment than any other, and this because of its extreme simplicity and the obvious facility with which it can be erected. Walled gardens are plentiful enough, but crops of fruit from them are not so plentiful, and the often disappointed owner of such a wall, at the time of the publication of the "Orchard House," had a solution of the problem suddenly presented to him. What can be so easy as fixing rafters against a wall and covering it with glass? There is the front protection and the back wall, and the thing is done. It looks easy, and the house when finished is bright and pleasant. A very slight increase of the temperature outside raises the interior to an early summer heat, and it is a very agreeable lounge. Unfortunately, these hopes were often fallacious. The builder had forgotten the main point of the orchard house—viz., thorough ventilation. The angle formed at the base of the back wall and the area of the floor never secured or provided a complete circulation, consequently the air became stagnant, and the insect pests of all glass houses soon showed their ill-omened presence, this was very unfortunate for the system, as lean-to houses were so simple, with boarded sides and backs the ventilation of course could be amply provided for, but people were often unwilling to break holes into brick walls. This difficulty is now, I am glad to say, easily removed, by the very simple plan of conveying air from the outside through 6-inch glazed drain pipes with open sockets at intervals of 6 feet. I was led to adopt this plan by the difficulty of ventilating the basement of a lean-to house, the experiment has succeeded perfectly, and possesses the great merit of economy. The drain pipes are not dear, and can be laid by any labourer at the trifling cost of excavation, no cement being required, a slab of slate or board will close the outer ventilator, and all ingress of air is at once stopped, the great convenience of ventilating thoroughly in windy weather will be soon appreciated by those who try this system. The lean-to orchard house 14 feet wide will take four rows of trees, two on each side of the centre path, the trees on the back row may be pyramids or half-standards, as there will be ample head room. It must be understood that in all these orchard houses the floors must not be paved, concreted, or flagged. It is absolutely necessary that the soil should be free for evaporation, the paths being gravelled. There is one very important point in the construction of orchard houses, and that is the supply of water, this cannot be dispensed with, and unless it can be easily and cheaply obtained it would be useless to spend money in building, as the work would be hopeless.

The question of soil must be considered very carefully by the orchard-house cultivator, as upon the quality which he uses will depend all, or much of his success. I think that I must consider myself fortunate that I have a soil in which the Peach fruits admirably, and this is a calcareous loam. Where it can be obtained there is nothing better. I prepare this for potting by throwing it in a ridge about nine months before using, mixing at the time of ridging about one-third of its bulk of good stable manure, and about a month before potting this soil should be placed in a dry shed, another third of well decayed manure being again mixed with it. If the soil is very tenacious, calcareous sand is an excellent material to use, for lessening this defect. The soil being prepared, the next operation is the potting, and this again, although apparently a very simple operation, requires some experience. My men, who are strong and hearty, and capable of hard hitting, ram the soil round the roots and in the pot with an instrument similar in size and weight to a policeman's truncheon, with all the vigour which a man can use when he has to work all day. One of the most fertile causes of failure in the early days of the orchard house, was the tendency to avoid this hard ramming on the supposition that the roots would not push their way through the soil, a notion completely erroneous.

The pots to be used for orchard house trees are by no means toys, being from 11 inches to 18 inches in diameter, according to the size and age of the tree. Good drainage must be provided, otherwise the soil will be sour; some large pieces of broken pots must therefore be placed at the bottom, the tree should not be too deeply potted, the upper roots being level with the rim. Young roots will always rise to the surface to feed, and will range round the side of the pot, showing the extraordinary attraction caused by the warm air of the house. Before I leave the subject I may here give the materials used for surface dressing, another important feature of pot culture. From long experience I have found the most efficient top-dressing, if it can be obtained, is horse manure free from straw, two-thirds, kiln dust (not the malt coombings) one-third, spread this in a bed about 6 or 9 inches deep and saturate it with cesspool water, use it the day after mixing. This mixture, if repeated during the summer will be found in the autumn as full of small roots as a peat bed. In addition to this surface dressing, trees that are bearing a full crop should be watered with liquid manure from a tank as close to the house as possible, this tank being supplied with a bag of soot for soaking, some rusty iron, and horse manure without straw renewed at frequent intervals; the necessity of frequently supplying food by surface dressing and liquid manure is evident, the property of water being to carry off the salts necessary for the trees. While treating of water I may as well refer to the very important subject of giving water to the trees, and common sense will suggest the mode of action. There is no dew and no water from the sky, and the syringe must therefore supply the deficiency. This should be done morning and evening while the trees are in full growth. Trees out of doors, whether in bloom or not, are visited by showers during the spring, and are not harmed by the heavy drenchings they occasionally endure, therefore there is no reason to suppose that the same treatment will injure them under glass. August and September are usually dry months, and this will indicate the treatment. The roots must not be allowed to be dry, but they should not be kept in a puddle.

Another important branch of orchard house culture is the pruning, and this must be governed by the age and condition of the tree. If healthy and well grown, a tree that will ripen from four to five dozen fruit will produce blossoms enough for ten times this quantity. When pruning in winter this must be carefully borne in mind and the shoots reduced to a reasonable limit, care being taken to prune always to a triple or a leaf bud, which will provide the fruiting branch of the ensuing year. Many varieties of Peaches and Nectarines are apt to produce long, unfruitful shoots, as there are sorts of equal quality which will give fruit spurs in abundance. I should advise the cultivator to grow these and avoid the others; this is a point which will be soon understood by those who have the management of an extensive orchard house, and the study of these variations will soon become very interesting. The individuality of my trees is of real interest to the manager, and the knowledge of these peculiarities is of great value to the grower for market, as the sorts which furnish abundant fruit spurs and wood buds require less room than the stragglers; under the limited space of glass every inch of room is valuable. Pinching or nipping, a very old and necessary practice, must be done while the shoots are tender, the first, which is the most important, being performed at the fifth or seventh leaf from the base of the shoot; this is generally practicable early in May, and must be pursued at intervals of three weeks or a month during the early summer, the object being to equalise and regulate the growth of the tree.

I have hitherto confined my remarks to the cultivation of Peaches and Nectarines only, but our climate is not more liberal in the continuous production of other fruits. The Apricot perhaps is more difficult to grow than any other except in certain districts in England, where, as I understand, the line of demarcation is very rigidly drawn and ceases with the absence of lime in the soil. It is a native of the dry and cold climate of Armenia, hence the name "Armeniaca," although the cold of this country is severe and enduring in winter, the summers are very hot, and this knowledge must guide the treatment under glass. If placed in the same house with Peaches the Apricot must have a special compartment which can be ventilated freely as soon as the trees begin to show signs of developing their buds (as a rule they are easily excited), and then air must be freely given. In the soil an extra dose of lime must be added, and as soon as they are in flower give air day and night, except of course during severe frost. The season of fruit may be much prolonged by placing them out of doors. As with Peaches the harder the soil the better the Apricot flourishes, and although the remark may be made that these fruits are grafted on the Plum stock, which will grow in loose garden soils, yet it must be remembered that the elaboration of the singularly hard and solid stones of the Peach and Apricot is completed by the tree, the stock being merely the vehicle.

The next fruit of all others which requires glass is the Cherry, a native of a much warmer climate than either the Peach or Nectarine. My Cherry house, which has existed for some twenty-five years, is a span-roof, 60 feet long by 14 feet wide, and I may say affords even greater pleasure than the Peach house. It is not heated in any way, but the Early Rivers Cherry begins to ripen about the first week in June, and for three months from this time I am never without ripe Cherries. The protection from birds, and from the heavy summer rains which often spoil the finest crop, allows a development of flavour and size which is quite extraordinary, and also permits the retention of the fruit on the tree long after the time of ripening. The Cherry will hang like the Grape, for weeks without any loss of flavour or appearance. In all respects the cultivation is the same as the Peach, except that the ripe fruit will not bear the syringe.

The Plum comes next in order of orchard house fruit, and though comparatively hardy, the finer kinds are well worth culture under glass, but there is no necessity to retain them in the house after they have set their fruit and are in no danger from spring frost. To those who care to afford the expense a wire house like an aviary should be constructed to receive the trees destined for the open air. This will keep

birds from injuring the fruit and will be very useful in retarding Peaches, Nectarines, and Apricots, although Plums and Pears are, of course, the principal fruits to place in it. These should be plunged in a border specially prepared for them, the pots being covered with light manure and watered occasionally with liquid manure. The trees would pay for the protection, as they will never cease to bear.

(To be continued.)

BULBS IN HOLLAND.

A DECEMBER SHOW.

Among the many varieties of bulbous plants cultivated in Holland during recent years so much attention has not been paid to those which may be forced very early as might have been desirable. The aim has always been to have large flowers, and those are not always found among the earliest. For many purposes, however, early flowers are wanted, and there is now a tendency among growers to give more attention to them than before. In January last a show of flowering Hyacinths and Tulips was held in Overveen, near Haarlem, which succeeded fairly well. At the general meeting of the General Royal Union for the cultivation of flower roots, held on the 26th ult. at Haarlem, it was decided to hold a show of flowering bulbous and tuberous-rooted plants on December 24th, 25th, and 26th, 1888. The previous programme, which was discussed and enlarged at the said general meeting, contains forty classes—viz., for Hyacinths and Tulips in pots or glasses, for Crocus, Narcissus, Amaryllis, Orchids, Anthuriums, Cyclamens, and for miscellaneous bulbs and tubers for the open ground, as well as for glass houses, novelties included. As this exhibition is principally undertaken for the benefit of the trade and for study, there will be no medals or money prizes given, but certificates of the first, second, and third class. By this Exhibition the varieties fit for early forcing, not sufficiently known at present, can be put in advance and in consequence become more appreciated by growers.

THE TRADE IN CUT FLOWERS.

In July last year communications appeared in your Journal on this subject. The General Royal Union for the Cultivation of Flower Roots at Haarlem have resolved to do everything possible to stop the sale of cut flowers, considered so very injurious to the bulb trade, and the resolutions for this purpose were adopted at the sixty-eighth general meeting of the Society, which took place on January 30th last, and were confirmed at the sixty-ninth general meeting, held on the 26th ult. The results communicated of the operations of the Society showed that 2081 bulb-growers and tradesmen had signed the declaration not to sell any cut flowers of Hyacinths, Tulips, Narcissus, Ranunculus, and Anemones for trade, and not to deal with those who sell such flowers, or who refuse to sign such declaration. The number of such signatures increases daily. On the contrary, there were only 107 names on the list of those who refused to sign, and there is every probability that this number will yet decrease. From these facts it may be concluded that the measures taken have received general sympathy.—J. H. Krelage, *President of the General Royal Union for the Cultivation of Flower Roots.*

JUDGING FRUIT BY APPEARANCE.

Surely Mr. Ward is mistaken in saying that you can judge of the quality of known varieties of Apples and Pears by sight alone. My own experience tells me that many well known varieties of both Apples and Pears may be of first rate quality or perfectly uneatable, or anything between the two, without there being the slightest apparent difference whatever between them. To name one instance, Beurré Bosc grown here on a wall sometimes ripens and is of fine quality, and sometimes is fit only for stewing, is never the same two seasons together in fact; yet it is always equally fine and well grown to look at. The same thing is more or less true of all other fruits. There is no such thing as perfect uniformity in quality even in Grapes, although they may come near it. So that if the object of judging fruit at shows be to promote quality in fruit and not sham and show, I do not see how it is to be done without tasting fruits; but it should be remembered that even then it is a most imperfect test of real merit, which can only (at least in the case of Apples and Pears) be found out by tasting them every two or three days during the whole time that they are in season.—C. W. Strickland, *Hildenly.*

NEWTON'S PATENT GLAZING.

In the *Journal of Horticulture*, March 15th, page 224, I was very pleased to see the remarks by Mr G. R. Allis on Newton's patent system of glazing. We have a house 32 feet by 12 feet, span-roofed, with partition erected by Mr. E. Newton, and I have seen none to equal it for lightness and strength. The heavy rains and wind of late have given it a very fair test, but not a drop of rain has been seen to come through owing to the small gutter in the galvanised iron sashbars. Neither can any draught be detected, which I have proved when the wind almost blew a hurricane. The temperature is all that can be desired; for instance, on March 21st, at 9.30 P.M., the temperature outside was 6° below freezing, and inside without any artificial heat it was 3° above freezing.—Henry Shoebridge, jun., *The Limes Gardens, Carshalton, Surrey.*



TANKS IN ORCHID HOUSES.

It was mentioned recently in some notes respecting Mr. R. H. Measures' collection of Orchids at Streatham that numerous "zinc" tanks were employed for retaining the rainfall. Mr. Measures states that they are nearly all galvanised iron and that he has a decided objection to zinc tanks. Upon several occasions when the water from an old zinc tank had been supplied to the Orchids in one of the houses, the foliage soon assumed an unhealthy appearance, especially the more delicate, such as Phalænopsis, but they quickly recovered when water from other tanks was given to them. It was carefully tested, and the evidence was so conclusive against the zinc tank that the water it contains is never supplied direct to the plant.—C.

SALES BY AUCTION.

Amateurs in London probably do not require a word of warning respecting the auction sales of Orchids, but there may be others who like myself are unversed in the peculiarities of this business and to whom the following note may be useful. I recently visited an auction room with a friend who had a somewhat valuable Orchid for sale, and for which a substantial sum was expected. The bidding appeared to be brisk, and the amount offered rapidly rose to £12, and by the time the auctioneer had made a few remarks respecting what a bargain it was at the price the bidding had reached £16. at which price it was knocked down. Shortly afterwards I turned to congratulate my friend upon the good price obtained, when he informed me the plant was unsold, and that there were no bids above £10. Query, how was the amount raised to £16? Did the auctioneer bid or did he imagine that others did? Whatever the cause, the result was misleading.—An Orchid Amateur.

VANILLA.

The following interesting particulars concerning the cultivation and fertilisation of the Vanilla are extracted from the "Kew Bulletin" for March. The illustration (fig. 36) is also from the same publication, Mr. Thiselton Dyer having obliged us with the use of the block.

The cultivation of Vanilla has been attempted in numerous tropical Colonies, but, with the sole exception of Mauritius and the Seychelles, it does not appear to have assumed an important position in any British Colony. This is due to a variety of circumstances. In some Colonies the climate may be unsuited to the successful growth of the plant, owing to seasons of extreme severity in droughts or heavy rains. In others the soil may be too retentive. In most of them, the need which exists for artificially fertilising the flowers of Vanilla, and the care necessary to properly cure the pods, have, no doubt, contributed to retard the cultivation. There are, however, no valid reasons why the cultivation of Vanilla in certain portions at least of the West Indian Colonies, of British Honduras, of the West African Settlements, of India, Ceylon, and the Straits Settlements should not be successfully pursued. With that view, plants of Manilla have been forwarded from Kew to certain Colonies where they did not previously exist, and it is proposed now to give very briefly the chief points bearing upon the industry.

The Vanilla plant is an Orchid of climbing habit, of which there are probably several species under cultivation. The more common plant appears to be Vanilla planifolia, *Andr.* (V. claviculata, *Sw.*). Other species under cultivation are V. aromatica, *Sw.* and V. grandiflora, *Eich.* The Botany of the plants yielding Vanilla requires to be carefully investigated. The specimens in the Kew herbarium in their present state throw little light on the subject. Hence, a good series of leaves, flowers, and fruits of plants yielding Vanilla, carefully dried or preserved in spirit, would be a valuable addition to the collections.

It appears that Selenipedium Chica, *Rchb. f.* (Xenia Orchidacea, vol. i., p. 3, t. 2) yields Vanilla on the Isthmus of Panama, which is described by Seeman ("Botany of Herald," p. 215), as follows:—

"The fruit of this plant is highly esteemed as an aromatic by the inhabitants of the Isthmus [Panama], and is used for all purposes for which real Vanilla is commonly used. It is termed 'Vanilla Chica,' or 'Little Vanilla,' because its fruit is very much smaller than that of any of the genus Vanilla found in the Isthmus."

Cultivation.—As regards starting a Vanilla plantation, it is important to bear in mind that the plants, being climbers, it is necessary to provide them with support of some kind, and generally, for this purpose, rough-barked trees, trellis-work, stone pillars, or stone walls are utilised. Living stems of rough-bark trees are probably the best supports of Vanilla. In Mauritius, the Seychelles, and Réunion, the stems of Jatropha Curcas are largely used. In addition to support, the Vanilla plants require a certain amount of shade. This, however, should not

exceed what is called half-shade (*demi-jour*). A certain amount of sun is, however, essential to the proper ripening of the pods. Whatever the support or nature of the shade may be, it is important to bear in mind that the Vanilla plants should be kept within easy reach of the cultivator, and not allowed to climb high up amongst the branches.

The ground around the support should be prepared by deep trenching to the depth of a foot or 18 inches. The drainage of a bed should be perfect. The most favourable soil consists of fine rich loam, mixed with equal parts of sand and leaf mould. Rich animal manure, or manure of any kind, is not a desirable addition. To renovate the soil at the end of the season, add some well-decayed vegetable mould or humus mixed with sand. Raise the bed about 6 inches above the surrounding surface, and support by means of stones or rockwork. Where obtainable, the cuttings should consist of portions of stems about 2 or 3 feet long, but all the better if 4 or 5 feet long. The leaves are first removed from the lower part, and three joints are laid under the soil and covered to a depth of 2 or 3 inches. The upper part of the stem is trained against the support in the position in which it is intended to grow. A single tree will carry several Vanilla plants, depending upon its size. The surface of the bed should be kept moist by being covered with leaves or "mulching," and, in very dry weather, it should be regularly watered.

Thus started, Vanilla cuttings readily take root, and the stem will grow and flourish. Depending upon the size of the cuttings, the plants begin to flower in the second year after planting. They do not, however, flower freely until the third and fourth years.

Fertilisation of the Flowers.—The first duty of the cultivator when the plants are in flower is to attend to the duty of fertilisation which, in countries where the Vanilla is not a native, will require to be done artificially. The flower of the Vanilla, as in most Orchids, is a very highly differentiated organ, the parts of which can be best studied by a reference to the engraving given on this page. In the wild state, the pollen is carried to the stigma of the Vanilla flower by means of the agency of insects. Where these particular insects are absent, their work must be performed by the cultivator, or no Vanilla pods will be produced.

It is recommended that the work of fertilisation should take place in the morning. It is advisable that all the flowers in a cluster be fertilised as they open; but of those that are successfully fertilised, only a certain number, depending on the age and strength of the Vine, should be allowed to remain. If too many pods are retained at first, the Vine is apt to be weakened, and the quality of the produce lowered.

The process of fertilisation will be better understood by a reference to the engraving given herewith. The only instrument necessary is a small piece of bamboo or sharpened stick the thickness of a lead pencil, about 4 or 5 inches long.

When the flower is opened, it will be noticed that there are three outer and three inner floral parts, which are sometimes designated the sepals and petals respectively. One of the latter is so much altered and so distinct in form and colour, that it is usually spoken of as the lip. Inside, and immediately hanging over the free part of the lip, is a process which is a continuation of the axis of the flower. This is called the column (see *b*, fig. 2). The end of the column enlarged, front view, is shown at fig. 4. At *a*, fig. 5, is represented the anther, containing the pollen masses, and at *b*, the stigma or viscid surface, on which the pollen must be placed in order to ensure the act of fertilisation. At fig. 6 is represented a section through the top of the column showing the position of the pollen masses *a*, and the stigma *b*. It will be noticed that the stigma is separated from the pollen masses by an upper lip projecting over the stigma. In the work of fertilisation it is necessary to lift up or tear away this lip, and transfer the pollen masses from the anther at *a* to the stigma at *b*, as shown in fig. 7. The mode of using the instrument is shown at figs. 2 and 3.

The work of fertilisation, when once understood, may be carried on with great rapidity. An expert person will, it is said, fertilise as many as a thousand flowers in one forenoon. The simplest mode is to seize the flower with the left hand between the thumb and middle finger, and support the column at the back with the forefinger. Then, with the sharpened instrument in the right hand, the hood at the top of the column is removed, so as to expose the anther and stigma. The upper lip of the stigma is

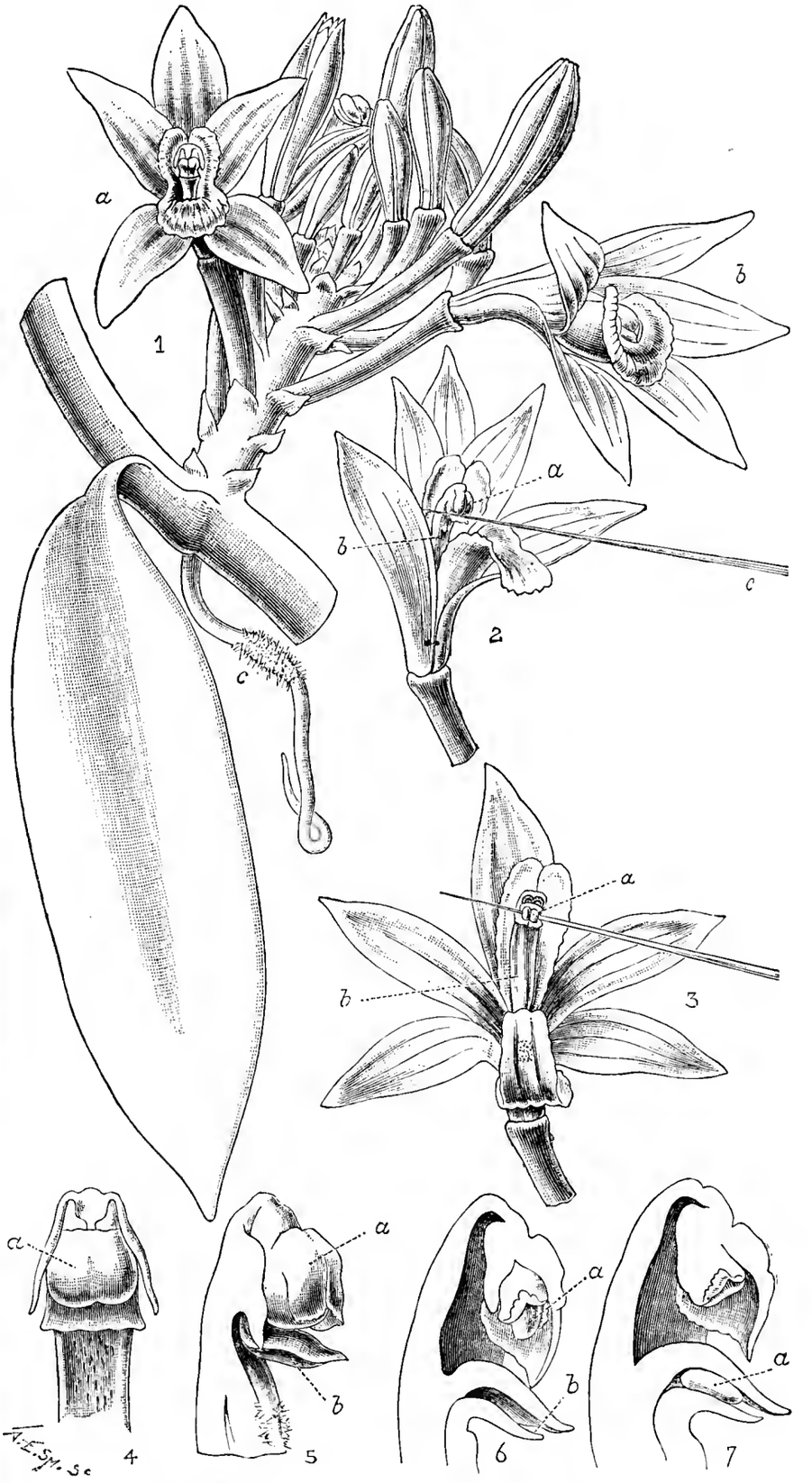


FIG. 32.—FERTILISATION OF VANILLA FLOWER (DELTEIL).

EXPLANATION OF PLATE.—FIG. 1.—Portion of stem of Vanilla plant, with leaf, aërial root, and cluster of flowers; *a*, front view of Vanilla flower; *b*, side view; *c*, aërial root, with root hairs.

FIG. 2.—Single flower of Vanilla, exhibiting the first stage in the process of artificial fertilisation. The operator, provided with a finely pointed piece of bamboo, divides the lip or labellum medially, so that the central lobe is separated from the two side lobes. This exposes the column and organs of fecundation. The instrument is represented as placed against the column, ready to press upwards the anther *a*, and bring the pollinia in contact with the stigma *b*.

FIG. 3.—Single flower of Vanilla, exhibiting the second stage in the process of artificial fertilisation; *b* shows position of column exposed by division of the lip [the middle lobe of lip is pulled forward and curled upon itself to show the position of the column; the side lobes of lip, separated as shown in fig. 2, are represented at back of the column]; *a*, the position of pollen masses, taken from the anther and placed on the stigma.

FIG. 4.—Enlarged front view of top of the column; *a*, the anther.

FIG. 5.—Enlarged side view of top of the column; *a*, the anther; *b*, the stigma, or viscid surface on which the pollen must be placed to ensure fertilisation.

FIG. 6.—Enlarged section through top of the column; *a*, one of the pollen masses *in situ*; *b*, the stigmatic cavity.

FIG. 7.—Enlarged section through top of the column; *a*, the pollen masses, having been transferred from *a*, fig. 6, are now represented in contact with the stigmatic surface. [Although diagrammatically shown, these figures give a tolerably good idea of what is actually necessary in order to produce fertilisation in a Vanilla flower.]

then pressed upwards, and the anthers brought down and placed in contact with stigmatic surface, as shown in figs. 3 and 7. The explanations given to the figures in the engraving will clearly show the operations here described. When the flowers have been fertilised they will begin to wither about the third day. By the end of the first month the fruit attains nearly its full size, although it is not fully developed until it is six or seven months old.

Curing the Pods.—The pods are left on the Vine until they begin to show a slight yellow tinge at one end. They are then gathered from day to day, care being taken not to injure those not yet fit to gather. When the day's gathering is completed, the pods are placed in a basket, and, according to one method of preparation, they are plunged for about half a minute in very hot, but not actually boiling, water. Directly after this operation the pods are spread out on mats to drain. For the next six or eight days they are exposed on woollen cloths or blankets in the sun, while each night they are kept in a closed box, where they undergo a certain amount of fermentation. When they have become soft and brown, the pods are placed to dry in the shade, they are carefully and regularly pressed between the fingers, slightly anointed with oil, and rendered supple and lustrous. When quite cured, the pods are of a rich dark chocolate colour, pliable in texture and perfectly free from moisture. The whole process of curing extends over several weeks.

In packing for the market, the pods are sorted according to length, and put up in packets of fifty pods each; they are tied in the middle, and also near each end. These packets are then carefully put up in closely fitting tin boxes. When Vanilla pods are in good condition, they become covered with an efflorescence of needle-like crystals of Vanillic acid. The interior of the bean is then soft, unctious, and balsamic.

Those who wish to carefully study the various modes of growing and curing Vanilla, cannot do better than consult "Vanilla, its Cultivation in India," by J. E. O'Connor, Calcutta, 1881; and "La Vanille, sa Culture et sa Préparation," par A. Delteil. Paris, Challamel ainé, 2, Rue Jacob, 1884.

Vanilla plants have been frequently grown and fruited in this country at Kew, at Sion House, and other establishments. In 1878, some bunches at Sion House contained as many as fifteen pods, each of which measured 9 inches in length.

Mr. Piesse gives the following interesting information respecting the use of Vanilla pods for perfumery purposes:—

"In order to obtain the perfume or essence, ½ lb. of such pods are cut up small, and put into one gallon of pure alcohol, of a strength known as 60° over proof, giving the whole a shake up daily. The ingredients must remain together for, say, four weeks, at which time all that is worth extracting will be found in the spirit, which may then be strained off quite clear and bright. It is then suitable as a flavouring agent, or, when blended with other scents, it makes delicious perfumery. Those sold under the titles of Clematis, Heliotrope, Wallflower, &c., mostly contain about one-half in bulk of Vanilla extract. About two centuries ago, Vanilla may be said to have been unknown in this country; it is, however, stated that Morgan, an apothecary, showed to Queen Elizabeth a sample, but he knew nothing more about it than that 'it was brought from abroad by some Spanish merchants.' At the present time the total annual average crop of all the varieties of Vanilla from the several countries which produce it may be estimated at 80,000 lbs., representing a value of not less than £150,000."

Notes & Gleanings

EVENTS OF THE WEEK.—The second meeting of the Royal Horticultural Society in their new quarters, the Drill Hall, James' Street, Victoria Street, will be held on Tuesday next, April 10th. Upon the same day a general meeting of Fellows will be held in the offices to consider the new by-laws proposed by the Fellows' Committee. Towards the end of that week numbers of British horticulturists will be making their way to Belgium, the Ghent Quinquennial Horticultural Exhibition opening on the 15th inst.

—— AMARYLLISES AT CHELSEA.—The extensive collection of Amaryllises in Messrs. Veitch & Sons' Nursery, Chelsea, is now open to visitors, and a fine display of brilliant flowers will be provided for several weeks.

—— THE WEATHER.—"B. D." writes from Scotland—"The weather in the beginning of the week ending April 2nd was disagreeable in the extreme. Snow, hail, and sleet fell on the 27th and 28th ult., the latter being in the afternoon and evening one of the wildest days of the winter. A strong gale blew from the N.E., and the snowdrift was in some districts even more severe than in the preceding storm. Frosts from 2° to 6° occurred in S. Perthshire during the week. March closed with a bright, clear, though cold day, with a N.W. wind, and April continues in its first two days to be of the same character." In the south cold winds have prevailed with occasional showers, and bright sunny mornings.

—— ON the eve of going to press we have seen an announcement of the death of PROFESSOR PLANCHON, of Montpelier, where he filled the Chair of Botany, in the sixty-ninth year of his age. He was well known throughout the horticultural and botanical world, was editor of Van Houtte's "Flore des Serres," and was commissioned by the French Government to proceed to America to investigate the ravages of the Phylloxera on the various species of native Vines. These he imported into France, and was instrumental in a great measure in having them substituted, both as permanent crops and as stocks on which to grow the European varieties. M. Planchon was also a frequent contributor to the scientific periodical literature of France. He was a correspondent of the Institute of France and of the Linnean Society of London, and was an honorary member of the Royal Horticultural Society.

—— WE are informed that a fire broke out early on Tuesday morning in a large packing shed in the nursery of MESSRS. RICHARD SMITH AND SONS, Worcester, and a workman in the nursery named Thomas Parker, a young man aged twenty-two, was found dead in the building. It is supposed that, being out late, instead of disturbing his landlady he went into the building to sleep, and that on lighting a match he dropped it and the dry moss caught fire, resulting in his suffocation, as he was very slightly burnt.

—— A CORRESPONDENT sends us the following note on RIPE PEACHES IN MARCH:—"On March 26th Mr. T. King, the well-known gardener at Devizes Castle, gathered a capital dish of Peaches from a tree of Early Alexander planted in a mixed Peach house. Last year he was a few days later in gathering, and the fruit sold readily at 5s. each. In all probability a still better price will be realised this year, as they will be sent to Covent Garden Market for Easter week. The house was closed on November 15th, and seeing what a long and very cold winter it has been, Mr. King's achievement is highly creditable. It is, in fact, very doubtful if anyone has, previous to this year, been successful in gathering ripe Peaches from planted-out trees so early in the season. It would appear that the Peach season now extends over a period of seven months, or from April to October inclusive."

—— A LATE Honorary Secretary of the Ludlow Horticultural Society sends us the following note on AZALEAS AT DOWNTON HALL:—"On the 27th ult. I was favoured by a kind invitation to visit the Downton Hall Gardens, near Ludlow, to inspect Sir Charles Rouse Boughton's collection of Azaleas, and venture to send you a few remarks on what I saw. The collection was well worth the visit, and comprised Alba; Bernhard Andreasalba; Charmer, red, a mass of bloom; Criterion, pink, a 5 feet mass of colour, and no leaf to be seen; Iveryana, John Veitch, Dr. Livingstone, Madame Glover, pure white, a beauty; Raphael, good; Roi Leopold, 6 feet high by 4 feet in diameter; much special care and attention seemed to be given to this plant; Sigismund Rucker; Stella, I would give the first prize here; Mrs. Wright, Flag of Truce, Her Majesty, Madame Marie Lefebvre, and Duc de Nassau. The arrangement of the above, with Roses in full bloom, Heaths, and other plants, made the visit on a snowy day a treat indeed."

—— "B." asks, "If it is generally known that MRS. SINKINS PINK is one of the best of forcing plants, not only on account of the ease with which it produces flowers, but more especially on account of the great size, fullness and purity of its blooms?"

—— THIS correspondent also remarks:—"I fell in with an old fashioned plant last autumn which I had not seen for nearly twenty years. It is called ROCHEA FALCATA, a very striking succulent, with a large corymb of small glowing blossoms dotted with a regiment of golden anthers. Everybody had to inquire about it. Some to insinuate a desire to possess so desirable a plant, others to boldly inquire as to the possibility of sparing a cutting. So you see, who read, that Rochea is worth growing." It is bedded out every summer in Battersea Park, and flowers freely.

—— CRICKETS IN GREENHOUSE.—"W. C." writes to know if any reader of the Journal can recommend anything to destroy crickets and cockroaches.

—— ROYAL PARKS AND GARDENS.—A return recently presented to Parliament gives the following particulars of the Royal Parks, &c. Battersea Park covers an area of 199 acres, and is devoted to the public, except about two acres reserved for frame ground to propagate plants. Bushy Park contains 994 acres, but from a large portion of this the public are excluded. No less than 104 acres are kept as meadow land for hay, and fifty-five acres timber, and these 159 acres produce £91 per annum. Then there is a reservation of seventy-five acres for the Royal paddocks, thirty-six acres for enclosures for deer, and the total reservation amounts to about 320 acres. Greenwich Park contains 185 acres, almost all devoted to the public; and Hampton Court Park, with an area of 752 acres, is wholly unreserved, and the same may be said of Hampton Court Green (seventeen acres), and Hampton Court Enclosure Gardens (forty-two acres). Hyde Park, with 360 acres, is also practically unreserved, and the public have equal freedom in Kennington Park (nineteen acres), Kensington Gardens (274 acres), Kew Gardens (248 acres), and Regent's Park (472 acres), the largest reservation in Regent's Park being thirty-one acres for the Zoological Gardens. Other portions also are let, bringing in a total revenue of £2344 18s. 10d., to which £358 0s. 9d. is contributed by the Zoological Society. There are also four contributions to the revenue—Baptist College and grounds, £213 8s. 9d.; St. Dunstan's Villa and grounds, £250 16s. 7d.; St John's Lodge and grounds, £234 2s. 3d.; Botanical Society's Gardens, £360; and South Villa and grounds, £333. There are also some smaller tenancies, which make up the total. Richmond Old Deer Park, containing 363 acres, is not open to the public, and produces a revenue of £972. Richmond and Petersham Parks cover 2470 acres, and from these the following reservations are made:—Plantations, 142 acres; mowing grounds, 104 acres; deer paddocks, 137 acres; ranger's meadow, twenty acres; arable and for growing roots for deer, eighteen acres. There are several minor areas from which the public are excluded, and the revenue per annum is set down at £400 for the sale of timber, and £100 for feeding cattle. St. James's Park (ninety-three acres) and Victoria Park (212 acres) are unreserved, but from Windsor Green Park, which covers 5300 acres, 1395 acres must be deducted from which the public are excluded. The revenue of this park is also nil. Windsor Home Park consists of seventy-three acres, with no restrictions to the public. Other parks in the kingdom are mentioned, the largest being Phœnix Park, Dublin, which covers 1752 acres, and of which area 421 acres are reserved for the Viceregal Lodge and other Government purposes.

—— MR. W. J. MURPHY, Clonmel, writes:—"Would some of your readers who succeed with the DOUBLE DAFFODIL, ALBA PLENA ODORATA, kindly say with what method of culture and under what circumstances, such as indoors or planted out, position, soil, &c.? I have tried and been disappointed with it repeatedly. Dutch bulbs, seemingly sound and planted in pots in a cold frame last September, are only in several cases now commencing growth. In other years they did similarly, or decayed. Those planted in a warm south border never flowered either. One bulb this year in a pot promised to be an exception, but has turned out a monstrosity—seemingly a dwarf form of the great double yellow Spanish Daffodil. It is only 8 inches high, with blooms very large and reflexed. I am sending it to Mr. F. W. Burbidge to examine."

—— THE same correspondent observes:—"I should like to ask how those beautiful and useful plants ANEMONE CORONARIA have fared with your readers so far. Here excellent strains, produced by a rigid process of selection of seeds, were grown in specially prepared beds in numbers of gardens. I have seen many others lately, and all seem, like the lines in my own borders, badly 'burned and battered.' I was very proud of two beds filled with plants raised from the celebrated 'St. Brigid' strain; but though they have fairly borne the alternate frosts, thaws, and sunshine, I blame the snow for doing most mischief amongst them. Cold does not seem to do as much injury to either blooms or foliage as thawing snow or sleet, with sunshine. At present the temperature of the soil seems lower than last January. To make certain of a profusion of blooms in the autumn I intend remaking two beds, using fresh loam from the farm, and sowing a selected strain of Anemone seed mixed with the 'St. Brigid' strain. Some half moist sand rubbed with the woolly seed hastens vegetation. I never transplant seedlings."

—— REPLYING to Mr. T. Winkworth's inquiries respecting LACHENALIAS, "T. H." remarks:—"I am unable to give him the information required, as I have never grown all of the varieties mentioned on page 233. Although I have frequently met with them in other gardens, I never thought them worthy of recommendation, as they generally throw up weakly flower spikes, and it is very rare for some of them to flower at all. The foliage is very pretty in some of the varieties, but not sufficiently to render them worth growing. I only recommend those varieties I was well acquainted with and that were easy to grow, and anyone following the simple instructions given could not possibly fail. I was pleased to see your correspondent endorse all that was said in favour of these plants, and I appreciate the compliment."

ROYAL HORTICULTURAL SOCIETY.

MARCH 27TH.

SCIENTIFIC COMMITTEE.—The meeting was held on this occasion in the committee-room of the Drill Hall—a room not very convenient of access, and suffering from the very great objection that the library is in another building. When the large room at Victoria Street is completed doubtless the meetings will be held therein. The difficulty then will consist in the necessity of removing the plants from the Drill Hall for the purpose of examination, and, moreover, at a time when it is particularly desirable to link together, rather than dissociate the several Committees. It is unfortunate that they should have to meet in separate buildings, but when there is a choice of evils the least must be the one selected. On the present occasion the Committee was represented by Sir Joseph D. Hooker, K.C.S.I., Chairman; Messrs. McLachlan, F.R.S., James O'Brien, Professor Church, Mr. F. Pascoe, Dr. Lowe, Mr. Albert Michael, G. F. Wilson, F.R.S., H. N. Ridley, British Museum; Professor Scott, School of Science; Professor Boulger, Dr. Masters, F.R.S., and Rev. George Henslow, Secretary.

The Blue Daisy.—Dr. Masters reported that the plant exhibited from Tangier at a previous meeting by Dr. Lowe was Bellis annua. Sir Joseph Hooker mentioned that it was common in the neighbourhood of Tangier, and that it was different from the plant found on the Atlas Mountain (Bellis cœrulescens).

Dispersal of the Seed in Pinus insignis.—Dr. Masters, alluding to the great differences that exist in the species of Pinus, as to the time at which the constituent scales of the cone separate in order to liberate the seed, showed a series of cones of Pinus insignis, the oldest of which bore the date 1864. In this all the scales were widely separate. The most recent cones dated from 1877, and in them the scales were not at all separated. Between these two extremes cones were shown exhibiting almost every intermediate stage of separation. It is to be remarked that the separation begins generally just above the centre of the pendulous cone on the side furthest away from the branch, at the place where the obliquity of the cone, due to the free exposure to light and air, and the absence of obstacles afforded by the branch was greatest, and that it follows a spiral course towards the base of the cone. The scales separate in successive spiral coils, till, at length, all except a few at the base and apex respectively, and which are probably sterile, are separated one from the other.

Semi-double and other Orchids.—Dr. Masters referred to various specimens submitted to him for examination. Among them were the following:—

Semi-double flowers of Cœlogyne flaccida.—These were obtained from M. Sallier, through the courtesy of M. Schneider. The conditions varied slightly in different flowers, but the most noteworthy case was one in which there were three sepals, three equal petals resembling the sepals in form, a column and two lips; these latter organs, therefore, representing two stamens of the outer whorl.

Cattleya Trianæ.—Three flowers were brought to the Committee at a former meeting by Mr. O'Brien.

In (1) the two lateral sepals were present and also two petals, one median, occupying the place of the absent sepal, and one opposite to it forming the lip.

This flower, then, afforded an illustration of a tendency towards a dimerous and decussate arrangement of the parts of the flower, such as is frequently seen in malformed Orchids.

In (2) the dorsal or median sepal was also wanting, its place being occupied as in No. 1 by a petal, so that of the two lateral petals one was dislocated from a lateral to a median position, while the other was adherent to the column. The other parts were normal. It would appear in this case as if, for some reason or other, that the median sepal was not developed; 2, that the axis of the flower underwent a twist of 45°, so as to displace the petal and transpose it into the position of the sepal; 3, at the same time that this unusual growth was taking place on one side of the flower development was partially arrested on the other (the concavity of the helix), so that the petal remained in union with the column.

The third flower was normal in all respects, except that the median sepal had the appearance of a lateral petal. The case was one, therefore, of petaloidy of the sepal.

(4) A fourth flower of the same species, forwarded by Mr. Marcus H. Voss, was remarkable for the absence of one of the side sepals without other change. Here, again, was another illustration of the tendency to a dimerous condition, there being two sepals (in this case placed obliquely), but one of them forming a pair with the lip, and two lateral petals.

Phaius grandifolius, Peloria.—Sir Trevor Lawrence obligingly sent a flower of this species with two sepals placed right and left, and two median petals, each lip-like in character, and provided with a spur. The column was straight, the anther imperfect and incumbent. This flower then again illustrated the dimerous condition as to number of parts and the peloric condition as to the form of the petals.

Odontoglossum crispum, Synanthy, &c.—Mr. B. S. Williams forwarded a raceme of this plant which showed a tendency to branch or become paniculate. The branch, however, instead of becoming detached remained in union with the main axis, producing somewhat of a fasciated condition. As a result of this union it happened that sometimes the flowers were scattered, while in other cases a node of the main axis was placed side by side with the branch, so that two flowers belonging to different axes were brought into contact, and not only this, but in some cases there was actual synanthy or union of two flowers. In one of these flowers there were four sepals in decussate pairs, from petals also in decussate pairs, and two lips placed opposite to two columns. There were thus twelve parts present instead of fourteen, two sepals being missing, presumably one of the lateral sepals of each of the two flowers being suppressed at the point of contact. In many cases of synanthy the suppression of parts takes place to a much greater extent, but then it is relatively uncommon to see synanthy between two flowers belonging to different branch systems.

Malformed Fuchsia.—Baron von Mueller kindly sent a flower, in which the ovarian cavity is absent, the flower-stalk ending in a club-shaped expansion, from which are given off two stalked leaves, while the scars between their bases indicate the existence of others which have fallen off. The sepals are represented by two coloured segments, both stalked. One of the sepals is three-lobed, the central lobe oblong lanceolate and coloured like the sepals (pinkish-white), the lateral lobes shorter, broader, and coloured like the petals (purple). The second sepal is divided above the middle into two oblong petaloid lobes. Then follow three obovate stalked petals. The stamens are absent, but there is a shallow disc surrounding the base of the ovary. This latter organ is superior, one-celled, with three parietal placentas, and surmounted by three styles, coherent all the way up, with the exception of the distorted stigmas.

Prolification, &c., in a Fuchsia.—From Mr. Douglas came an extraordinary flower. In this case the ovary was present, but there was no flower-tube above it. In place of that the ovary was surmounted by a tuft of sepals, petals, and stamens, forming an entangled mass, some of the parts being leafy, others petaloid, others staminoid, with others presenting various intermediate characteristics. The flower had partly fallen to pieces before it was examined, but the presence of four leafy sepals, as many leafy petals, and then a number of parts, the exact relative position of which could not be determined, and which presented the intermediate characters before mentioned, were observed. Within these sprang a second flower with a curved calyx-tube giving off four sepals and as many petals. The stamens were increased in number, some nearly perfect, others represented by long filaments terminating in spoon-shaped petalline laminæ. The ovary of this flower was superior, but very imperfect, and surmounted by a style divided into two stigmatic lobes. A section across the ovary of the flower showed a double series of vascular bundles, the outer belonging to the flower-stalk, the inner to the carpels embedded in its substance. It would seem, then, that the complicated arrangements of this flower may be referred to dialysis, metamorphy, and displacement of various organs associated with median floral prolification, or the production of a secondary flower from the centre of the first in the position occupied by the style in a normal flower.

Anthurium Chamberlaini.—Dr. Masters exhibited a drawing of a magnificent new Anthurium, which had appeared accidentally with an importation of Cattleya Gaskelliana, in the garden of the Right Hon. J. Chamberlain. The heart-shaped leaves are of gigantic size, and the large boat-shaped spathe is of the richest crimson colour. Mr. Cooper (gardener to Mr. Chamberlain) speaks in high terms of this plant as a decorative plant.

Eucalyptus urnigera.—Dr. Masters showed specimens of this Tasmanian species in flower and fruit. It had been received from Whittinghame Gardens, Prestonkirk, near Edinburgh, and not far from the sea. The tree was perfectly hardy.

Daffodil with Crested Corona.—Rev. E. C. Gabbett sent through Dr. Masters two flowers of a curious Daffodil from plants growing on his lawn in Co. Limerick. The "firill," or outgrowth, is produced from the outer surface of the corona, which has thus a very peculiar appearance, of which we hope shortly to give an illustration. Mr. Gabbett reports that six blooms were so affected, and that in former years, when the weather was more propitious, the frilling was more pronounced. Mr. Gabbett had observed this peculiarity for four or five years.

Fringed Cyclamen.—Mr. O'Brien showed a flower of this variety in which the petals produced a crest-like outgrowth from the upper surface of the petals. But in this instance there was the additional peculiarity that the petals were not reflexed as usual, but formed a belt-shaped corolla. Dr. Masters adverted to the anatomical peculiarities of these flowers, which were referred to Dr. Scott for further examination as to their structural details.

Douglasia lævigata.—Mr. G. F. Wilson alluded to this plant as having been shown before the Floral Committee as a charming dwarf alpine plant exhibited from the Royal Gardens, Kew, and proposed that it should receive a botanical certificate, which was agreed to. It is a low growing plant with tufted leaves and lilac flowers, like those of an Androsace, but larger and with the tube of the corolla longer than the calyx, and with only two seeds to the capsule. The species are natives of North-western America, the first known species having been collected by Douglas not far from the sources of the Colombia River, and named in his honour by Dr. Lindley.

Hybrid Phalænopsis.—Mr. Ridley reported on the Phalænopsis shown at the last meeting as a cross between P. amabilis and P. rosea, but stated that he was unable to detect any trace of P. rosea in it. Mr. O'Brien remarked that the influence of the cross was sometimes observable in the vegetation of the plant, even when it was not conspicuous in the flower.

Acacia armata.—Mr. Pascoe reported upon some leaves of Acacia armata, from the surface of which a brownish outgrowth proceeded. This was ascertained not to be of fungus origin, and it was considered probable that it might be the work of a Coccus. Mr. O'Brien alluded to the formation of similar excrescences as a consequence of insect or aphis punctures.

Euchresta Horsfieldi.—Mr. Christy sent some seeds of this plant, not unlike roasted coffee. The natives of Java use them as a tonic and to arrest the spitting of blood. The shrub is the only known species, and grows in the mountain districts of Java and Formosa. Dr. Horsfield says the natives use the seeds an antidote to any poison, and Leschenault says the powdered fruits mixed with food prevents diseases. Mixed with Lemon juice they are also applied externally to wounds.

Cola Chocolate.—Mr. Christy sent samples of chocolate made from the seeds of Cola acuminata, and which he had ascertained to be useful in certain forms of indigestion.

Bamboo Cane.—Rev. G. Henslow exhibited a box which had contained seeds sent from Japan. Professor Church stated that the form of some of the Italian drug-pots of the fifteenth and sixteenth centuries appeared to have been modelled from the Bamboo vases.

Araucaria imbricata Timber.—Mr. Ford, gardener, Leonardslee, exhibited slabs of wood cut from a tree of this species, and which at 6 feet from the ground girthed 26 inches, and the tree being 35 feet in height. The wood was yellow, soft, evenly grained, and, judging by the distance between the rings, quickly grown.

Plants Exhibited.—From Mr. Ware came specimens of the elegant Leucojum trichophyllum. Sir Trevor Lawrence sent Masdevallia Carderi, a species remarkable for its deep and broad cup-like flower-tube. To this, as also to Trichoglottis fasciata, and the Douglasia before mentioned, botanical certificates were awarded.

CAMELLIAS AT WALTHAM CROSS.

MESSRS. W. PAUL & SON'S nursery at Waltham Cross is widely famed for its Roses, which provide the visitor in June and July with a wonderful floral feast, but the establishment is scarcely less noted for its Camellias, and these are at their best during March and early April. A spacious span-roof house, 130 feet long, 36 feet wide, and 14 feet high, is there devoted to large and small specimens of all sizes, and the best varieties, to suit all requirements and tastes. There are healthy little plants in 48-size pots and tree-like specimens in tubs 3 or 4 feet across; there are varieties of all imaginable tints from the purest white or delicate blush to the richest crimson and brightest fiery red, the flowers ranging as widely in form, from the most exact symmetrical imbrication of wax-like petals to the great bold flowers of the semi-doubles of the Donkelaari type. Beautiful and useful as small healthy Camellias in pots invariably are, all the characters of these plants cannot be seen until they reach the size of specimens 10 or 12 feet high, when, either planted out or in tubs, they annually load themselves with their handsome flowers. About 100 such specimens are arranged in the central bed of the house already mentioned, and most of these are compact bushes 3 to 6 feet in diameter, ornaments for any large conservatory, as their rich glossy green foliage renders them attractive even when not flowering. The free growth made, the abundance of flowers produced, and their general satisfactory condition, prove how carefully their culture is studied; there is no other secret. A soil of substantial loam, plenty of water when growth is being made, both at the roots and on the foliage, and a thorough ripening, are the chief items of the practice, and the results are vigorous health with flowers to be gathered by bushels. The smaller parts in various stages are numbered by thousands, and all alike can be characterised by one word—excellent.

Over 220 varieties are represented in Messrs. Paul & Son's collection, and from these the following fifty are selected as the most distinct and of the best habit, a few of these being marked with an asterisk to indicate the most useful for small collections. Adamo, white flaked with rose; Adelina Benvenuti, pale pink spotted and striped crimson, very free; *Alba plena, the old double, unsurpassed as a white variety; Auguste Delfosse, crimson striped white; Angustina superba, bright pink, handsome; Baron de Vriére, excellent shape, delicate blush striped white; Beali, crimson; Beali rosea; Beauty of Hornsey, deep rose, streaked white; Belle Jeannette, crimson, handed white; Benneyi, bright red, white streaks; Bonomiana, white streaked with crimson; Candidissima, white, delicate; *C. H. Hovey, one of the best varieties,

rich crimson, excellent form; *C. M. Hovey, bright, nearly scarlet; *Commendatore Betti, very large, broad petals, rose pink, free, good habit; Conspicua, semi-double pink; Contessa de Hainaut, exquisite

Donekelaari, semi-double, crimson flaked with white, large flowers, free and handsome variety (fig. 37). This makes a fine specimen for a conservatory. Chandleri elegans, clear rose, large flowers; Fatima, an



FIG. 37.—CAMELLIA DONCKELAARI.

delicate blush tint, and fine shape; Contessa Woronzoff, rosy pink, good form; Corallina, bright deep red, tufted centre, useful, free; Countess of Derby, white striped with pink, very beautiful; Countess of Orkney, a pretty cupped flower, white, streaked rose; Cup of Beauty, somewhat variable, but handsome, blush tinted, or sometimes nearly white.

early, dark red variety; *fimbriata, white with fringed petals; imbricata, bright rosy red, an excellent variety, free and of good habit; Lavinia Maggi, white striped with pink; *L'Avenir, rose with lighter margins and stripes; Leopoldo Benucci, pink, white centre; Livia Boromeo, similar colour; Luerezia Gazzarrini, pink striped white; Madame

Cachet, white, with faint pink streaks, pointed petals; Madame de Strekaloff, blush, large handsome flowers, round petals; Marchioness of Exeter, brilliant rose, good shape; Maria Nicolais, crimson, neat flower; *Mathotiana, very dark crimson, large bold flowers; M. d'Offroy, soft pink, charming symmetrical flowers; *Ninfa Egeria, white with dark and beautiful foliage, flowers well formed; Prince Albert, white, streaked pink, handsome; Princess Charlotte, white, with faint pink tinge; Princess Clothilde, semi-double, white streaked pink; Principessa Rospigliosa, pink, small but free, light centre; *Rafia, very rich dark crimson; Reine des Fleurs, dark red; *Reticulata, semi-double, bright rose, graceful habit, free; *Romaniensis, white mottled crimson; *Souvenir d'Emile Defresne, red striped with white, free; *Targioni, very delicate pale pink, tipped white; and tricolor imbricata, white streaked with red and rose, well formed flower, free.

Considerable difference is observed in the time at which the varieties flower, but the following six are some of the earliest, and the succeeding six are late varieties. *Early Varieties.*—Alba plena, imbricata, L'Avenir, Donck laari, Princess Charlotte, and Fatima. *Late Varieties.*—Countess of Derby, Belle Jeannette, Cup of Beauty, Lecana superba, Contessa de Hainaut, and C. M. Hovey. With plants of these and the midseason varieties in different stages, the Camellia season can now be prolonged over a much longer period than formerly, a constant supply of flowers can be had for at least three months.

THE LIVERPOOL SHOW.

MARCH 28TH.

THE elements seem to have decreed that the Exhibition should not prove a success financially, as was the case last week. Snow commenced falling early in the morning, accompanied with a strong piercingly cold wind, then rain followed, and continued more or less during the day. Yet the large number of exhibits in St. George's Hall made one of the finest displays that has been brought together since the Society has been in existence. There was a falling off in some of the classes, while the additional interest afforded by others more than counterbalanced any deficiency. The falling off was most conspicuous in the Hyacinth and Polyanthus Narcissus classes, but this may and doubtless is due to the postponement of the Exhibition from an earlier date.

Stove and Greenhouse Plants.—For six stove and greenhouse plants Mr. J. Jellico, gardener to F. H. Gossage, Esq., Camp Hill, Woolton, took the lead with fine plants of Pritchardia pacifica, Latania borbonica, Croton Queen Victoria, Rhododendron fragrantissima, 3 feet through and covered with bloom, Azalea indica, and a Chorozema Lawrenceanum. Mr. A. Crosbie, gardener to B. Hall, Esq., was a good second; Mr. A. R. Cox, gardener to W. H. Watts, Esq., securing the remaining award. For one foliage plant, Mr. A. Crosbie was accorded the premier position with a large specimen of Asparagus plumosus in grand condition, being fully 5 feet high and 4 feet through. In the corresponding class for one flowering plant, Mr. J. Harrison, gardener to Mrs. W. G. Bateson, took the lead with Phaius grandifolius with about twenty spikes fully 5 feet high. For one greenhouse plant in flower, Mr. A. Crosbie was again successful with Imantophyllum miniatum coccineum with fifteen or sixteen fully expanded trusses, most of them being 8 or 9 inches across.

Hyacinths.—On the whole these were not so good or staged in such large numbers as has been the case at previous shows held by the Society. In the class for eighteen distinct varieties, Mr. C. Waring, gardener to Mrs. J. Sikin, Princess Park, Liverpool, was well ahead with strong plants of the leading varieties. Mr. J. Kelly, gardener to R. Singlehurst, Esq., Endfield House, Aigburth, was second. The flowers were much smaller, and the foliage considerably drawn. Mr. T. Stephenson, gardener to R. Cornelius, Esq., Aigburth, third with an uneven collection. In the class for twelve, Mr. A. Cox took the lead with praiseworthy examples. The remaining exhibits in this class were uneven, and merit no further comment. No less than seven competitors staged in the class for six plants, Mr. C. Copple, gardener to T. S. Rogerson, Esq., securing the foremost place with good examples of King of the Blues, Fabiola, La Grandesse, Lord Derby, Grandeur à Merveille, and Kooh-i-noor; Mr. T. Wilson, gardener to O. H. Williams, Esq., Fulwood Park, Aigburth, was a good second; and Mr. C. Waring third. For six pots, three bulbs in each, not less than three varieties, Mr. T. Stephenson was first with well-grown plants, followed closely by Mr. P. Barber, gardener to A. Barnsley, Esq., St. Michaels Hamlet; third Mr. James Kelly. Seven collections were staged. Mr. C. Waring was the only exhibitor in the class for twelve Hyacinths in glasses, and the examples staged were very good. They well merited the first prize awarded them; many of the flowers were superior to those shown in pots, and the foliage dwarf, considering they had been grown in water.

Narcissus.—These were poorly represented, only two collections being staged for the prizes offered for six pots. Mr. P. Barber took the lead, and Mr. J. Loundes, gardener to S. S. Parker, Esq., obtained the second award. It is a pity that prizes are not more generally offered to encourage the culture of border varieties in pots, which for effectiveness surpass the Polyanthus varieties.

Tulips.—We have seen on past occasions a greater display, but the quality throughout has not been as generally good as on this occasion. It is gratifying to say that there was scarcely a poor example in any of the collections. In the class for twelve pots (single) of six varieties Mr. A. Collins, gardener to S. Smith, Esq., Princess Park, took the lead, followed by Mr. Barber and Mr. T. Stephenson. For six pots Mr. A. R. Cox took the foremost position with dwarf well grown plants. Messrs. C. Copple and J. Loundes were second and third respectively. For ten pots of double fine varieties Mr. T. Stephenson gained first honours; Mr. John Bounds, gardener to A. L. Jones, Esq., Aigburth, second; and Mr. W. Bustard, gardener to J. Lewis, Esq., third. For six pots Mr. Barber was first, Mr. J. Loundes second, and Mr. C. Copple third.

Crocuses were particularly good, being shown in 8-inch pots. Six competitors staged for the three prizes offered. The prizewinners were Mr. Barber; Mr. J. Watson, gardener to F. Tobin, Esq., Aigburth; and Mr. W. Bustard in the order named.

Lachenalias were not numerous, only two lots being staged for the three prizes offered. Mr. T. Winkworth, gardener to R. Brocklebank, Esq., Childwall Hall, was well first with L. Nelsoni, the 5 and 6-inch pots having from ten to twelve spikes each. Mr. W. Bustard was second with the less showy tricolor, but the specimens staged were very creditable.

Primulas were represented by several collections, but none were of a noteworthy character except those staged by Mr. A. R. Cox. These were dwarf and well flowered; in fact, the plants were very fresh and the flowers of large size and substance.

Cinerarias were considerably above the average, in fact they were not only better but more numerous than they have before been at the Association's Show. The first prize collection, staged by Mr. T. Stephenson, were all that could be desired. The plants were dwarf with good heads of particularly large well-shaped flowers. Mrs. Watts and Mr. W. Porter gained the second and third awards, while Mr. Warrington, gardener to T. Bright, Esq., was deservedly awarded an extra prize.

Lily of the Valley.—No class in the schedule was better filled, or the prizes more keenly contested for, than the three offered for six pots of these flowers. Mr. J. Jellico was placed first. The second and third prize exhibits as well as many others were specially good, but we omitted to take down the names of the various competitors.

Azaleas.—On the whole these were better than they have been for some years. Mr. Jellico was the chief prizewinner with well flowered examples of Fielding's White, Souvenir de Prince Albert, Reine de Pays Bas, Charles Van Echaute, Alba variegata, and Roseum; Mr. W. Wilson, gardener to H. Cunningham, Esq., Gorsey Cop, Gateacre, was a good second, and Mr. W. Bustard third with uneven specimens. Azalea mollis was particularly good, many of the plants being large and most profusely flowered. For four plants Mr. J. Bounds was first with plants 3 feet through them, and full of flower; Mr. J. Loundes was a good second, and Mr. A. R. Cox third. For one plant the prizewinners were Messrs. J. Jellico, J. Bounds, gardener to A. L. Jones, Esq., and C. Waring.

Ferns were not largely shown, but those staged were good. Mr. T. Gowen, Linton Lodge, Mossley Hill, was well first for four exotic varieties with a large fine plant of Goniophlebium subauriculatum; Adiantum assimile, 3 feet 6 inches through; Dicksonia squarrosa, with a stem 3 feet, and Dicksonia antarctica. Mr. A. R. Cox was second with fresh well-grown plants, and Mr. W. Bustard third. For one plant R. Brocklehurst, Esq., was placed first, and Mr. T. Stephenson second. For one Tree Fern Mr. Jellico took the lead, followed by Mr. J. Bounds, both showing healthy well-grown plants.

Palms and Cycads.—Only two classes were provided for these, and six lots were staged in the two classes. The plants were fresh and healthy and of a moderately large size. In the class for three Mr. A. Crosbie gained the first position, followed by Mr. T. Gowan and Mr. A. Gowan, gardener to W. C. Clark, Esq., Sefton Park. For one plant Mr. J. Agnew was first with Kentia Belmoreana, a fine healthy young plant: Mr. A. Crosbie was second with Cycas revoluta, and Mr. J. Bounds third.

Forced Plants.—Three good collections were shown. Mr. A. Crosbie was placed first for six plants with Clematis Madame van Houtte very fine, Rose Climbing Jules Margottin, large plants of Rhododendron Purity, and Deutzia graeilis were very fine. Mr. W. Bustard was second, and Mr. J. Bounds secured the remaining prize.

Table Plants.—These were shown in the usual style, and were very attractive down the centre of one of the tables. The plants in every instance were small, neat, and light. For six plants Mr. J. Agnew, gardener to Mrs. Watts, was first, his collection comprising Draceena gracilis, D. Sydnei, Croton interruptus aureus, Pandanus Veitchi, and Thrinax grandieeps. Mr. C. Evans, gardener to W. Maxwell, Esq., was a good second, and Mr. Jellico third. For three plants Mr. G. Park, gardener to Lieutenant-Colonel F. ffarrington, Wigan, was first.

Roses.—On the whole Roses were much better than they have been before at any of the Association's spring shows. For four plants Mr. A. Crosbie took the lead with Adam, Souvenir d'un Ami, Duc de Magenta, and Isabella Sprunt. Mr. A. Lewis was second, and Mr. W. Bustard third. For one plant Mr. Crosbie was again first with Souvenir d'un Ami; Mr. W. Bustard second with Maréchal Niel, and Mr. J. Loundes third.

Hardy Rhododendrons.—The effectiveness of the Exhibition was materially increased by the Rhododendrons. With four plants Mr. W. Bustard won first honours, showing moderately large plants, followed by Mr. Kelly and Mr. J. Stephenson. Mr. J. Agnew led with hardy herbaceous and bulbous plants.

Orchids.—Now that so many of these plants are grown in the neighbourhood, this portion of the schedule might with advantage be extended. For four plants Mr. J. Edwards, gardener to A. Tate, Esq., was placed first with Odontoglossum radiatum, having four good spikes, Cattleya Mendelli, with three fine flowers, Cypripedium villosum, a fine pan with fifty or sixty flowers, and the old Maxillaria Harrisoni with about

twenty flowers. Mr. J. Poyntz, gardener to R. Young, Esq., was second with Cattleya Trianæ having six flowers, Dendrobium erassinode with six or seven large pseudo-bulbs flowering profusely, a fine variety, and Dendrobium nobile Wallichianum with about a dozen well-flowered growths. Mr. A. R. Cox was third, and had good examples of Cymbidium Lowianum and Phalænopsis Schilleriana. For one plant Mr. Jellieo was first with a fine specimen of Dendrobium Jamesianum bearing many flowers. Mr. J. Harrison, gardener to Mrs. W. G. Bateson, was second with Phaius grandifolius; third, Mr. J. Bounds, and an extra prize was awarded to Mr. Poyntz.

Groups.—In the elass for a group of miscellaneous plants arranged for effect, to occupy a space of 60 square feet, Mr. A. R. Cox and Mr. J. Jellico were rivals for the first position. Both staged light, neat, and effective groups. Mr. Cox was successful; his arrangement was better finished near the edge. This exhibit was a little over 4 yards long and nearly 3 wide, with a plant of Coeos Wedd-lliana raised in the centre, Crotons about 3 feet high at each corner, with two Aralias on eaeh side of the Cocos. The gro mdwork was composed of Adiantum cuneatum, dotted with Primulas, Cyclamens, Tulips, H acinths, a Colcus or two, and Masdevallias. Mr. Jellico's group had two Dracænas raised above the groundwork, and if it had been better finished at the margin would probably have secured the first position. Mr. J. Kelly was third, four competitors staging for the three prizes offered.

Cut Flowers.—In the open class for one bouquet Mr. G. Cashel of the Liverpool Horticultural Company seeured the chief award, followed by Messrs. Fishlock Brothers, St. John's Market. The latter was the best shape, while the former secured the position by its choice flowers. In the corresponding elass Mr. J. Mercer, Higher Bebbington, was first, Mr. J. W. Sandback, Birkenhead, second, and Mr. J. Agnew third. A class was provided for six Roses, eut blooms, and several competitors entered. Mr. J. Downham, gardener to E. H. Harrison, Esq., Eastham, was placed first with large magnificent flowers of Gloire de Dijon, Maréchal Niel, Duke of Edinburgh, Etoile de Lyon, Madame Lambard, and Rubens. Mr. J. Bounds was second with really good blooms, and Mr. Thos. Wilson third. For a box of stove and greenhouse cut flowers Mr. A. R. Cox was placed first, Mr. Bounds second, and Mr. J. Jellico third.

Fruit to some extent was a new feature, although Grapes have been staged on past oecasions. With two bunches of Grapes Mr. G. Park was first for good examples of Alicante, and Mr. Elsworthy, gardener to A. R. Gladstone, Esq., was second with the same variety, well kept. Mr. J. Smeatham was third. Mr. Elsworthy also contributed four bunches (not for competition) of Alicante, White Tokay, and Gros Guillaume. The bunches were not large, but very fresh and plump. Mr. Hannagan, Hooton Hall, also staged a collection of fine Apples, and a certificate of merit was awarded.

Miscellaneous exhibits.—The tables of flowering and fine-foliage plants from local nurserymen have never been so effective. Messrs. R. P. Ker & Sons staged a quantity of the newer forms of Azalea indica, some of whieh were noted last year. Conspicuous amongst them was the following, exhibited at Liverpool:—Sacountala, double white, very good, mueh after the style of Deutsche Perle; M. de Kneef, single white with large pure well-shaped flowers; and General Postmaster Stephen, very dark, after the style of Flambeau. Mr. J. Davies, Wavertree, contributed a beautiful group of Hyacinths, Narcisus border and Polyanthus varieties, Amaryllises, Azaleas indica and mollis, as well as a general assortment of other flowering plants. The Liverpool Horticultural Company had a similar table of plants in which Orchids were freely employed. They also contributed a number of wreaths, crosses, and bouquets. Messrs. Fishlock Brothers also staged a similar exhibit, including a number of the most lovely sprays suitable for ladies. Mr. J. Bramham displayed outside the Hall his heating apparatus, and Mr. Bethel his folding boxes, while Messrs. W. Wood & Sons had on view their samples of peat and loam. All who took part in the arrangements of this exhibition deserve the highest congratulations. The stagers had a very arduous duty to perform, for the hall was occupied the night previous, and the staging and other arrangements could not be attended to until the morning of the show. This was bad for all, more especially as the weather could not have been worse. The only regret is that it was not so largely patronised by the public as such an elaborate exhibition deserves to be.

GLASGOW AND WEST OF SCOTLAND HORTICULTURAL SOCIETY.

The Hyacinth and Spring Show of this Society was held in the City Hall on Wednesday, the 28th of March. The weather was of the most unfavourable description, sleet, eold winds and hard frost (7°) preventing many competitors risking their valuable plants. Fortunately several of the largest eolleetions were staged on the day preceding the Show, otherwise it would have been a comparative failure. The well known firm of Messrs. Austin & M'Aslan, Buchanan Street, eontributed largely to the success of the Exhibition, having a splendid bank of flowering shrubs, containing many fine varieties of hybrid Rhododendrons and Azaleas, A. mollis being in some instances particularly good. An uncommon sight at this season was a plant of Laburnum in full flower. Messrs. Smith & Simons filled two tables, each 12 by 6, Azaleas and stove plants remarkably well grown and tastefully arranged; while from the Island of Bute Messrs. Dobbie & Co. brought a very choice assortment of border Narcissi, good specimens of N. bicolor Empress, N. Horsefieldi, N. Princess, and the pretty small white N. albicans, these attracted much attention, as did also a very pretty one named Mary Anderson. Mrs. M'Kenzie, 65A, St. Vincent Street, sent five large choice bouquets, which were highly commended.

R. Brooman White, Esq., Arddarroch, Garelochhead, sent a choice collection of Orchids in flower, many of them for the first time, as they are his own importation, the plants of Dendrobium nobile being much finer in colour than we usually see. A very fine form of D. Dalhouseanum was prominent, D. superbiens had two fine spikes, several hybrid Odontoglossums and a particularly good O. Rossi majus—a most interesting collection, such as has not been seen in Glasgow for many years. The eondition in which these plants were staged after such a long journey reflected much credit on Mr. White's gardener, Mr. W. Kidd. Mr. Jas. Bryson, nurseryman, Helensburgh, sent, as usual, a grand eollection of Roses, eut blooms Maréchal Niel in large quantities, and pretty floral designs, a large anchor of Maréchal Niel Roses being greatly admired. Banksian, Tea, and hybrids were also largely represented, the whole forming one of the most interesting features of the Exhibition. Mr. George Russell, gardener to Mr. J. B. Mirrlees, Redlands, Hillhead, exhibited a choice collection of flowers of seedling Rhododendrons.

In the elass open to all for the best Tree Fern Mr. Geo. Meston gardener to W. Carsewell, Esq., Murcia House, Pollokshields, had first and Mr. John Campbell, Govan, second. For one hand bouquet Mr Raeside, Yorkhill Gardens, was first; Mr. Geo. Bambridge second; and Mr. Geo. Neil, Greenhead, St. Newmills, third. Mr. Donald McBean, gardener to J. C. Cunningham, Esq., of Craigends, had the best dish of Mushrooms. In the class for nurserymen only the prize for twelve table plants was gained by Mr. John Sutherland, Victoria Nursery, Lenzie, and were models of what table plants should be. Mr. Sutherland was also first for three hardy Rhododendrons. For a table of bulbs 12 feet by 6 feet Mr. Peter McKenzie, 65, St. Vincent, was awarded first prize for an admirable collection. Mr. McKenzie was also first for eighteen Hyacinths with fine even spikes, and Mr. John Sutherland was a good second.

Gardeners' and Amateurs' Class.—Table of plants 12 feet by 6 feet. The first prize was gained by Mr. Geo. Meston, and although he had no opposition, his table well deserved the award. Mr. Thos. Hogg, gardener to John Gordon, Esq., of Aitkenhead, was the most successful competitor in the plant class, and his plants were never shown in better condition. He was awarded first for six stove or greenhouse plants in flower, distinct varieties, and for three stove or greenhouse plants, comprising a magnificent specimen of Rhododendron Countess of Haddington, densely flowered, Azalea Duchesse de Nassau, and a good Cœlogyne. Mr. Geo. Meston was second. With three specimen Orchids Mr. Hogg was first, having splendid plants of Cypripedium insigne 3 feet through and splendidly bloomed, Cœlogyne cristata, and Dendrobium Wardianum. Mr. Geo. Neil was second. The best three specimen Azaleas, and three Azaleas in 8-inch pots, were shown by Mr. Hogg; second, Mr. Wm. Cowan, Killellan, Campbeltown; and third, Mr. Geo. Irvine, Italian Villa, Pollokshields. Mr. Hogg also led with three greenhouse Rhododendrons, six Cyclamens, and three Amaryllises. He exhibited some blooms of seedling Azaleas obtained from grandis crossed with Apollyon, the result being very satisfactory, all the blooms of good shape and substance, large, and fine colours, ranging from pure white to deep crimson. The chief prize for three hardy Rhododendrons was gained by Mr. Wm. Cowan. For one specimen Mignonette, Mr. Wm. Dickson, Chanting Hall, Hamilton, was first, and Mr. Walter Rae, Woodville, Biggar, second. With six table plants, Mr. Alex. Raeside, Mr. A. Montgomery, Rozelle, Partick, and Mr. Agnew, Ascog, were the prizetakers in the order named. For three Cinerarias, Mr. J. Lyon, gardener to J. W. Moore, Esq., Greenlaw, Blantyre, had first, Mr. Thos. Hogg second, and Mr. Jas. Bell, gardener to Miss Lyon, Stonelaw Tower, Rutherglen, third. Four Chinese Primulas were shown by Mr. Wm. Halliday, Cordale Gardens, Renton, Mr. Hugh Millar, gardener to A. Russell, Esq., Auchenraith, Bothwell, and Mr. Chas. F. Carnegie, Gartshore House Gardens, Kirkintilloch. The prizes for twelve Hyacinths were gained by Mr. Donald McBean, Mr. Carnegie, and Mr. Geo. Irvine. Messrs. Hugh Millar, Geo. Irvine, and Chas. F. Carnegie were placed in the order named with six double Hyacinths. For six Hyacinths, Mr. Carnegie was first. Mr. Geo. Irvine second, and Mr. D. McBean third. Three pot Hyacinths, three in each pot, Mr. Hugh Millar had first, and Mr. Robt. Millar, gardener to Mrs. Clark, Netherhill, Paisley, was second. For the best arranged and most meritorious basket of spring flowering plants, Mr. James Millar, Castlemilk gardens, was deservedly first, Mr. Henry Dixon, Knightswood, second, and Mr. A. Raeside third.

Tulips were plentiful and shown in eapital condition. Mr. Heron, Pollok Gardens, Pollokshaws, the successful competitor of former years, was again to the front, securing the first position with four pots of Tulips, three pots of single Tulips, and four pots of Polyanthus Narcissi; Mr. Hogg being second in both classes, and Messrs. Raeside and Millar third. For four pots Crocus, Mr. Millar had first prize and Mr. Wm. McIntosh second. Six Alpines in pots not to exceed 6 inches, Mr. John Mecklam, Cameron Place, Bridge of Weir, had first; Mr. John Nicoll, Carriagehill, Paisley, second; and Mr. Wm. Watson, Bellsbank, Rutherglen, third. For three pots Spiræa japonica, Messrs. Geo. Meston was first, Wm. Cowan second, and Wm. Halliday third, were the prizetakers. Two pots or pans Lily of the Valley, pots not to exceed 9 inches, were shown by Mr. Wm. Cowan, Mr. Heron, and Mr. Dixon in that order. For three pots not exceeding 6 inches, Mr. Cowan was again first, Messrs. Heron and Dixon following. With two pots of Primula obconica Mr. A. Walker, Gallowflat Place, Rutherglen, had the first place;

Mr. D. McDonald, Dalmuir House, Drymen, second; and Mr. Watson third. With six blooms Camellias, distinct varieties, Mr. D. Waddell, Southpark, Rothesay, was first, showing splendid blooms; Mr. Thos. Hogg, a close second; and Mr. Wm. Semple, gardener, Castle Semple, Lochwinnock, a good third. For six trusses Rhododendrons, Messrs. Hogg and Millar were respectively first and second.

In the class open to amateurs only there was a good display, many of the exhibits comparing very favourably with the professionals, notably the Hyacinths, the most successful competitors with these being Messrs. Henry Dixon, Knightswood, and Wm. M'Intosh, 2, Firpark Terrace, Dennistoun. A very interesting class was the one open to ladies only, for one Hyacinth grown entirely in water. Miss M. Hutchieson, 32, Carriagehill, Paisley, was first, Miss M. R. McIntosh, 2, Firpark Terrace, Dennistoun, second, and Miss M. Sharpe, 21, Heriot Street, third. Two pots Dutch bulbs in bloom, first was gained by Miss M. R. McIntosh, Miss M. Hutchieson second, and Miss Jessie B. Taylor, Craigie Knowe, Barrhead, third. For three Hyacinths grown entirely in water Miss M. R. McIntosh was again placed first, Miss Lizzie Sharpe second, and Miss Janet J. Sutherland, Victoria Nursery, Lenzie, third.

The arrangements of the Show, which were entirely satisfactory, were as usual carried out under the superintendence of Mr. Franc Gibb Dougall, the energetic Secretary of the Society.—KELVIN.



MARIE BERTON AND JAMES SPRUNT.

THE former of these is the most beautiful of all the Gloire de Dijon race, and deserves much more general cultivation. It has the same free growth as its parent, the young shoots and foliage are of a handsome dark red colour, and the large pale yellow blooms very attractive in appearance. In strong contrast in size and colour is the also little known Bengal Rose, James Sprunt, a climbing sport from the old Cramoisie-Supérieure (Agrippina), the flowers of which are of rich velvety crimson, and fuller and larger than the parent sort.—W. WESTON TURNOR.

THE PAST WINTER—CLOSE PRUNING.

THE time for pruning our Roses is now at hand, and I made the first cut last week. I am agreeably surprised to find that the Roses here, at the altitude of 1000 feet above the level of the sea, or thereabouts, have suffered very little, and I think our prospects are decidedly rosy. Favoured with fair average weather, we may hope to have fine Roses in due time. After former winters, I have often noticed that Baroness Rothschild (the Baroness herself, and none of the new and not too satisfactory imitations) has been killed quite brown and dead at the base of the shoots; this season, so far, I have noticed nothing of this. In fact, I have not seen any dead wood on any of the Roses. That I am pruning harder and closer than ever goes without saying, as I get more and more proof of its advantages the older I grow. Here is a fresh instance: A standard of Niphetos in a pot had the head broken off short; nothing remained but to cut it back to a mere stump, but lo! shortly appeared a new strong shoot about as thick as a lead pencil, which grew to 2 feet long, and then branching at the top into four distinct branches, produced twelve blooms, the first of which was, vulgarly speaking, a "whacker!" My mental memo. on the occasion was "Cut all standards in pots (and out of pots, too) back to a single eye in future." I wintered a quantity of Teas in pots in open frames, simply packing dead leaves round them and strewing them loosely over the branches. The frost has, of course, killed the exposed part of the shoots back, but under the leaves I find all alive and the buds plump and swelling. I did intend to place lights over these plants, but omitted to do so, and I think the result is even more satisfactory to me, and the plants stronger than if I had done so, besides the saving of labour opening and shutting the frames during the winter and early spring.

MERVEILLE DE LYON.

Are Rose growers going mad, or why is it that this best of Roses goes a begging? To my thinking there can be nothing finer at a Rose show than a large box of these blooms, all alone, none of another colour put in to kill the purity and beauty of the best white Rose we have. On a vacant piece of ground here it is my fixed intention to have a perfect sea of this variety. The plot holds 5000. When completed and in full bloom I think it will be worth seeing.

HER MAJESTY.

Many are the questions asked as to the pruning of this Rose. I have a hundred of them planted out in poor soil, unmanured, and these I am only cutting down to about a foot long. This, I think, is the best plan to follow until we have more experience of the growth of it as a cutback. It is possible that being so near a relation to Baroness Rothschild, it may, like that Rose, answer under close pruning. On second thoughts, I will, as an experiment, cut one row of the plants hard, and communicate the result in due time.—D. GILMOUR, JUN.

MANETTI STANDARDS.

RELATIVE to Mr. Gilmour's note on page 265, a gentleman purchased three dozen Roses from a continental nursery a few years ago, probably because they were somewhat cheaper than home-grown plants. They were almost exactly similar to the example figured to be avoided on the page quoted, some having longer and some shorter stems. They grew fairly well, or some of them did, the first year, but subsequently one after another dwindled and died, in spite of special efforts to prevent it. In the same bed other Roses worked low, with some raised from cuttings, grew luxuriantly year after year. Roses worked on Briars with clear stems grew admirably in the same garden, but the stilted Manettis refused to thrive.—THE GARDENER.

LEEDS PAXTON SOCIETY.

THE second annual dinner in connection with the above Society was held on Wednesday, the 28th prox., at the Grand Restaurant, Boar Lane. Over 100 members and friends sat down to an excellent repast. Mr. Joseph Smith, President of the Society, was in the chair, and the vice-chair was occupied by Mr. J. W. Frankland (Vice-President). The tables were tastefully decorated with flowers furnished by various members of the Society, and these were greatly admired. After the usual loyal and local toasts had been duly honoured, the Hon. Secretary, Mr. William Appleby, was called upon to read the report, which showed that the Society consisted of five honorary and 117 ordinary members. During the year twenty-three essays on different gardening subjects had been read at the Society's meetings, and these had given rise to much useful discussion, and the Executive had hopes of securing the attendance of those who had hitherto held aloof, inasmuch as the advantages accruing from membership establish a strong claim upon every lover of horticulture in the district. The Committee had already formed the nucleus of what it was hoped will soon become an extensive and useful library, and steps will shortly be taken to as far as possible enlist the sympathies and co-operation of employers of gardeners in order to make the Society still further a source of mutual advantage. The average attendance of members had been thirty-seven, which was deemed fairly satisfactory. A donation of £5 had been sent to the Gardeners' Orphan Fund. The statement of accounts showed a balance of £12 17s. 7½d. to the credit of the Society. The report was formally adopted.

In responding to the toast of the "Leeds Paxton Society," which was proposed by Mr. H. Chapman (Wakefield), the President remarked that he believed the Society could now claim to be thoroughly established, and he had good grounds for believing that the ensuing year would show a large increase in the number of members. He promised on behalf of the Executive that every available means should be taken of making the objects of the Society a source of profit and usefulness to its members. "Kindred Societies" was proposed by Mr. Newman, who spoke of the great advantages to be derived by a commingling of members of different societies, and gave a cordial welcome to the delegates present. Messrs. Hale (Wakefield) and Edcolmb (Rotherham) responded. "The Yorkshire Association of Horticultural Societies" was proposed by Mr. Wood, who remarked that as the Association's meetings were held at Leeds this year, they (the Paxton Society of Leeds) were desirous of signalising the present year by making the Association more practically useful than had hitherto been done, and he hoped that those societies not at present in the Association would shortly become so. Mr. Proctor (Morley Paxton Society) replied. Mr. M. Ramsden proposed "The Officers of the Society." He said the Society owed much of its prosperity to the well-directed efforts of its managers. Messrs. Frankland and Appleby responded.

"The Essayists" were proposed in eulogistic terms by Mr. Hancock, who spoke of the great pleasure he had derived from the reading of essays, and he considered this the most important part of the Society's work. Mr. Barnes returned thanks. Amongst those taking part in the evening's proceedings were also included Messrs. Kay and Featherstone (Leeds), Collier (Bradford), and Holland (Sheffield). A party of glee singers contributed largely to the enjoyment of those present, and the Society is to be congratulated upon the very satisfactory arrangements made by the indefatigable Secretary.

EARLY SWEET PEAS.

ALL growers are partial to plants that will grow well without much attention, remain quite free from insects, and give an abundance of showy or fragrant flowers, and as possessing the above characters the Sweet Pea is of especial value. As a rule it is only grown out of doors. The seed is sown in the open in April or May, the flowers are produced in June or July amongst hosts of others, when they are not half so much valued as they would be in May or earlier. Attractive sweet-smelling flowers are not numerous in that month, and if Sweet Peas were grown to blossom from May onwards they would be most valuable. As a rule we have them in bloom in April and always in May. Our plants are now 1 foot high, but seed sown now would have flowers before May was over and long before those out of doors expanded. We place from twelve to eighteen seeds in some good soil in 3-inch pots. They are placed in a heated pit, and the plants grow as soon and freely as the culinary Peas. When about 3 inches high they are given more air, and as soon as the pots are filled with roots they are transferred into 8-inch pots, and it is in these they are flowered. They succeed best in rich soil, well drained, and as soon as they are growing freely they are placed in a position

where they are well exposed to the light and air. This may be in a pit or greenhouse, or if the weather is genial in April in a cool frame. When the growths become so long as to be inclined to fall over they should be supported by a few tall twigs, and supplied with plenty of water at the roots. Insects will never trouble them, and as soon as they gain a height of 18 inches they will begin to show flower, and then the best position is the greenhouse or conservatory, as the soft green of the foliage, the bright hues of the flowers, and their delicious fragrance gain them general favour. If the flowers are allowed to form seed the supply will soon cease, but if they are cut before they wither a long succession will be produced.—A KITCHEN GARDENER.

THE EUCHARIS BULB MITE.

FOR the past three years we have had a few bulbs of Eucharis decay through the autumn and winter months, and in each instance I have found this little insect on the decayed bulbs and in the soil adhering thereto. It appears to me the mite attacks the bulbs when the soil in which they are growing in remains wet for several days together. I think an average temperature of 50° during the dull months of the year is anything but a good one for the Eucharis. This is the temperature our plants are in during the period named above. To prevent the soil becoming too wet we have to water the plants very carefully, and by adhering strictly to this, I think we prevent the insects attacking more

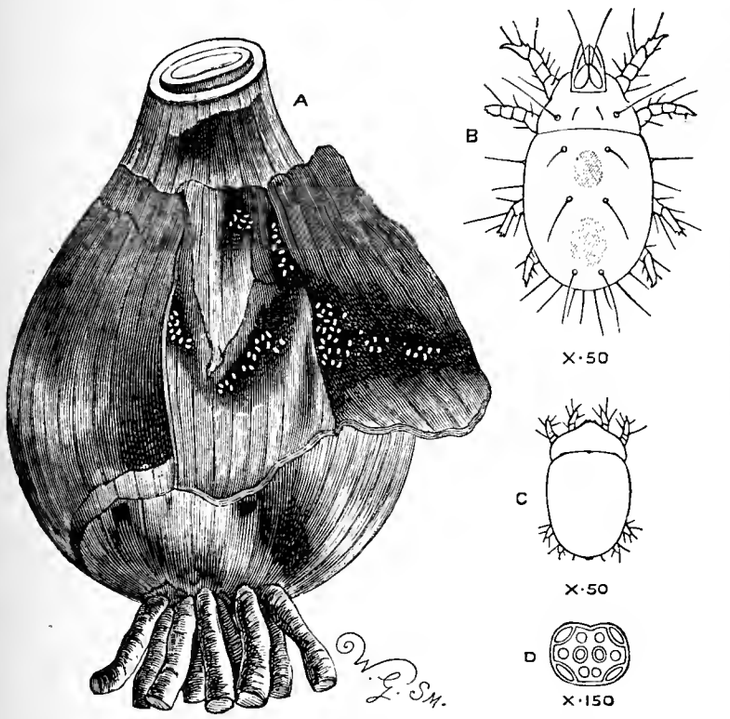


Fig. 38.

A.—Eucharis bulb, natural size, showing mites.
B.—Mite enlarged fifty diameters; the male and female are the same size, they differ a little underneath. Body colourless, legs very pale rose, with two brown spots on body.
C.—Hypopial form, enlarged fifty diameters.
D.—Suckers from underneath ditto, enlarged 150 diameters.

of our plants than they do at present. By what I have noticed for some time, I am of opinion that drought is detrimental to the mite. I do not wish anyone to think that we keep our Eucharises on the verge of flagging to prevent the bulbs being attacked by the mite. Our aim is to keep the soil in which these plants are growing neither wet nor dry. Nothing will prevent the roots of the Eucharis decaying if the soil is allowed to become dust dry, and is then saturated directly after. With these notes I am forwarding a few decayed bulbs, with the insects on them, for the Editor's inspection.—E.

RHIZOGLYPHUS ROBINI.

APROPOS of the Eucharis mite and its brethren of that group, I have to remark, first that they furnish one of the most perplexing problems in insect life, and their study is quite a specialty, to which some naturalists, chiefly continental, have given a large amount of time with only small positive result. The creatures are found to occur in two forms, so peculiarly distinct that it is thought by some the one is a parasite by which the other is attacked and devoured; while others argue that the insect is all one species throughout, but undergoes a curious transformation. On the whole, our latest evidence favours the latter view, but there is this complexity, that though for some time it was supposed the hypopoid harder-skinned form was the final outcome of the Rhizoglyphus, instances have been discovered where it was just the reverse, the Hypopus becoming a Rhizoglyphus. The most feasible conjecture is that under certain atmospheric conditions the changes are modified by Nature, and the supposed hardier Hypopus type appears when the Rhizoglyphus would be liable to extinction. All this is exceeding curious, but probably not interesting to the majority of gardeners. We are still in the dark on the important point, how these insects, seemingly very sluggish, manage to transfer themselves or their progeny from bulb to bulb.

M. Claparède says that the female of R. Robini has, when adult, a peculiarly thick and clumsy third pair of legs. The habits of the two are similar, but this species has been detected also upon the roots of the Potato and Dahlia; R. echinopus may frequent these too, though as yet the fact has not been recorded. R. echinopus (also called Hypopus Dujardinii) was, it is thought, first observed by Boisduval, who called it Acarus Hyacinthi, on the supposition that it had a special liking for Hyacinths. The continental authors remark that persons who had to handle infested bulbs complained of irritation of the skin caused by the mites migrating to the human body; this does not appear to have been noticed by our gardeners. It is probable that the autumn is the season when they propagate.—J. R. S. CLIFFORD.

ROYAL METEOROLOGICAL SOCIETY.

THE usual monthly meeting of this Society was held on Wednesday evening, the 21st ult., at the Institution of Civil Engineers, 25, Great George Street, Westminster, Dr. W. Marcet, F.R.S., President, in the chair.

Dr. G. E. Scholefield and Col. W. S. Young were elected Fellows of the Society.

The President, Dr. Marcet, delivered an address on "Atmospheric Electricity." He first alluded to Franklin's experiments in America in 1752, who succeeded in obtaining the electricity of a storm-cloud by conducting it along the string of a kite sent into the cloud. De Romas in Europe repeated the experiment, and having placed a wire within the twine his kite was attached to, obtained sparks of 9 or 10 feet in length. The characters of the two kinds of electricities were next described—the vitreous or positive, which was produced by rubbing glass; and the resinous or negative, obtained by rubbing sealing wax or another resinous substance; and it was shown by bringing suspended balls of pith within the influence of these electricities, that electricities of different kinds attract each other, and those of the same kind repel each other. De Saussure's and Volta's electroscopes were next described, pith balls being used in the former, and blades of straw in the latter, for testing the pressure of electricity. With the object of measuring the force of electricity, Sir W. Thomson's electrometer was mentioned, in which the electricity is collected from the air by means of an insulated cistern, letting out water drop by drop, each drop becoming covered with electricity from the atmosphere, which runs into the cistern, where it is stored up, and made to act upon that portion of the instrument which records its degree or amount. The atmosphere is always more or less electrical, or, in other words, possessed of electrical tension, and this is nearly always positive, while the earth exhibits electrical characters of a negative kind.

The effects of atmospheric electricity were classed by Dr. Marcet under three heads—1, Lightning in thunderstorms; 2. The formation of hail; 3, The formation of the aurora borealis and australis. He explained how clouds acquired their electrical activity by remarking that clouds forming in a blue sky, by a local condensation of moisture, became charged with positive electricity from the atmosphere; while heavy dark clouds rising from below nearer to the earth were filled with terrestrial negative electricity, and the two systems of clouds attracting each other would discharge their electricity, giving rise to flashes of lightning. In some cases a storm-cloud charged with positive electricity would approach the earth, attracting the terrestrial negative electricity, and when within a certain distance shoot out a lightning which would apparently strike the earth; but it would just as well have struck the cloud, only there was nothing in the cloud to sustain any damage, while on the earth there were many objects a lightning would destroy, to say nothing of its effects upon animal life. Thunder is the noise produced by the air rushing in to fill up the vacuum made by the heat of the lightning flash. There may be sheet lightnings, zig-zag or forked lightnings, and globular lightnings. The latter are particularly interesting, from their assuming a spherical form. Illustrations were given of objects struck by lightning, the most remarkable being, perhaps, the clothes of a working man, which were torn into shreds, while the man himself was not seriously injured.

Dr. Marcet next proceeded to show a flash of lightning, which he produced by throwing on a white screen the image of an electric spark 2 or 3 inches in length, enlarged by means of the lens of an optical lantern; forked lightning, 6 or 8 feet in length, with its irregular zig-zag course, was most clearly demonstrated. After alluding to the protecting

power of lightning conductors and their construction, Dr. Marcet explained the formation of hail and of waterspouts, and exhibited an instrument by Prof. Colladon of Geneva for showing the formation of waterspouts. He concluded his address with a few remarks on the aurora borealis and australis, the formation of which was illustrated by De la Rive's experiment, which consisted of successive discharges of electric sparks through a partial vacuum while under the influence of a powerful magnet; electric sheets of light were seen assuming the form of bands and possessed of a certain rotating motion.

Mr. G. J. Symons, F.R.S., read a short communication on "The Non-existence of Thunderbolts," briefly described the history of several so-called thunderbolts, the specimens obtained being of an amusing character, thus clearly showing that they were of a terrestrial and not a celestial nature.

In connection with this meeting a most interesting exhibition of instruments was arranged in the rooms of the Institution of Civil Engineers. The Exhibition was devoted chiefly to instruments connected with atmospheric electricity. There are various forms of electrometers, including those formerly in use at the Greenwich and Kew Observatories. Numerous patterns of lightning conductors were exhibited, together with models of churches, houses, chimney-shafts, and ships, showing the various methods of protection. The Postal Department showed a number of lightning protectors used for telegraph purposes. Many objects damaged by lightning were exhibited, including lightning conductors, telegraph apparatus, portions of rafters, trees, &c., also the clothes of a man torn off his body by lightning. An interesting collection of meteorites and some alleged thunderbolts were shown, the latter being of an amusing character. There were also several new meteorological instruments exhibited, which had been brought out during the past twelve months.

One of the special features of the Exhibition was a most valuable and interesting collection of over fifty photographs of lightning flashes. Many of these were taken during the great thunderstorm which occurred in London on August 17th last year, while others were taken in various parts of the world. The Exhibition also included a large number of photographs of damage by lightning, and photographs of clouds and meteorological instruments, as well as records of atmospheric electricity.

CHRYSANTHEMUMS

CHRYSANTHEMUM BELLE PAULE.

I WAS much struck upon entering a conservatory on March 27th to find plants of this variety bearing flowers. They were, of course, pale in colour as well as being small, but still they were useful, and I was told some that had been cut a short time previously were much better. The plants had been both late struck and pinched late as well, thereby making late growth. This is only another instance showing what an adaptable plant is the Chrysanthemum.—S.

NATIONAL SOCIETY'S EXHIBITIONS.

I STRONGLY advise the National Society to issue their schedule of prizes with the least possible delay, so that intending exhibitors will know what to prepare. I noted some time since in the Journal a list of the sections which was intended to be included in the Society's official catalogue. It is proposed to define and make a class for Japanese reflexed varieties. This being so, it is but natural to suppose the intention is to encourage that section by offering prizes for them at the metropolitan and provincial shows. I trust the leaders of the Society will take this gentle reminder that there are many persons who are anxious to know the programme for the coming season, so that proper arrangements may be made conducive to the welfare of the Society as well as simplifying the work of exhibitors generally.—A POSSIBLE EXHIBITOR.

FERTILISATION OF EARLY PEACHES.

I MUST agree with your correspondent, Mr. James B. Riding, that it is not a safe plan to trust altogether to the tapping system in the case of early forced Peaches. We do not commence forcing here until February, and then we use a camel-hair brush. We have a splendid set of both Peaches and Nectarines in our first house by the above means, and later ones promise well.

I should like to hear from any of your correspondents who practise the syringing system mentioned by "S. T. C." I am not venturesome enough to try it myself. With reference to tapping the trees I fail to see how it can answer, except in the case of trees on the back wall and trees grown on wires near to the glass. To practise tapping trees grown as ours are—viz., on the half-moon trellis, would result in the pollen dropping on the ground. Taking everything into consideration, I think the camel-hair brush the best and safest method to be adopted.—G. HILTON.

WORK FOR THE WEEK.

HARDY FRUIT GARDEN.

FIGS.—In the south and south-western counties Figs frequently produce profitable crops, and many more trees might be grown with advantage. A hot sunny corner, formed by the junction of a south with a west wall, will be found the best position for the trees, but many a high sunny end wall of outhouses, and indeed various blank spaces on south walls, might well be utilised for Fig culture. A rich soil is altogether unsuitable, this causing a rank unfruitful growth, and which is far from being hardy. The site should be well drained, and, if it can be spared, replace the ordinary soil with turfy loam and old mortar rubbish, the latter, for which chalk is a good substitute, being added at the rate of one bushel to three bushels of loam. A wide border is not to be recommended, the most prolific trees being those planted in a comparatively narrow border with a hard pathway or carriage road in front of it. The roots invariably find their way into the hard roads, and this poorness and firmness of root run induces the requisite short-jointed growth. Brown Turkey and White Marseilles are the most prolific on the open walls. Brunswick is quite as hardy as these, and a fine variety, but as a rule is a shy bearer. Preference should be given to trees grown with a clear stem, and as these are generally supplied in pots, planting ought always to be deferred till all danger of severe frosts is past. The branches should be laid in fan-shaped, no shortening back being resorted to unless more branches are needed for laying the foundation of the tree. The leading branches being trained thinly laterals will start freely from these, and which, if well thinned out, those reserved being laid in right and left, will ripen properly and fruit the following season. Young trees ought not to be very freely pruned, as plenty of young branches are usually forthcoming for laying in wherever there is space to be filled, these being of a more fruitful character than those obtained by pruning.

PRUNING ESTABLISHED FIG TREES.—In most districts it is necessary to protect the trees, and more especially the points of the young wood, this being done either with Russian mats, thatched hurdles, or branches of Spruce Fir. Last March exceptionally severe frosts were experienced in some of the southern counties, and those trees uncovered and pruned early were much injured in consequence. The first week in April is quite soon enough to uncover the trees. As before stated, a too free use of the knife is unwise, and on the other hand, unless some pruning is annually done the centre of the trees soon becomes bare, the outside branches or points only being fruitful. Supposing the main branches are thinly trained and well furnished with lateral growth, one-half of these ought to be cut back to near their starting point, this inducing the formation of several young growths. One of these being laid in and the remainder early removed, a considerable number of short fruitful branches will be obtained. The following spring the remainder of the old laterals may be similarly shortened back. In this manner half the lateral growth will be pruned every season, and a constant supply of fruitful wood maintained. As a rule Fig trees are informally trained, and where this is the case all the pruning necessary consists of thinning-out the wood, those long branches that have reached the limit being sawn or cut back to near the main stem. A few being thus cut back every year, young bearing wood will be always well distributed about the tree. This training ought always to be practised, and on no account should the short-jointed young growths be shortened, as these produce the fruit.

PROTECTING PEAR TREES.—Those on walls especially, and which are remarkably well set with buds, fully repay for any trouble taken with them in the way of temporary protection. It is unwise to wait till the flowers are open before the protection is given, as a severe frost will cripple those in a bud state. Many Pears are of such value as to merit wooden coping, boards, rods, and curtains, these being so contrived as to be easily opened or closed. The next best coverings are doubled or trebled fish nets, these being fastened to the top of the wall and kept clear of the trees with the aid of long poles let into the ground 2 feet from the wall, and fastened to staples or spike nails near the coping. If the nets are hung over the trees early they will moderate the effects of sharp frosts, and also preserve the buds from the birds. Very large pyramids are not easily protected, but those on the Quince stock or miniature trees are not so difficult to cover. About five long and strong poles are needed for each tree, these being let into the ground at equal distances apart, and made to meet over the centre of the tree. They ought to be quite clear of the principal portion of the branches, and securely fastened at the top. The protecting material may be either doubled or trebled fish netting, cotton netting, frigi domo, or garden mats. The three first-named may frequently be left over the trees for several days, or during the prevalence of cold frosty winds, but the mats are too heavy, and if left on in the daytime will weaken the bloom. Cordons trained near garden walks are easily protected. All that is necessary in this case is to fix a single line of rods or stakes directly over and about 12 inches clear of the trees, the protecting material being thrown over this and fastened to pegs in the ground on each side.

CROOKED ORCHARD TREES.—A ride through many rural districts will bring into view numerous young fruit trees, and which, whether in orchards or singly, are in a very unsatisfactory state. Not one in twenty are properly staked, and the consequence is a number of trees with very crooked stems, and which will not greatly improve as they gain in strength. All young trees ought to be kept carefully staked and well protected from cattle. This leads to the formation of clean straight stems, these in their turn being conducive to the growth of large healthy fruitful heads. Either one stout stake or three moderately strong ones ought to be placed to each tree directly they are planted, this in addition to keeping the stems straight also preventing wind waving them and consequent injury to the roots. If strong rope yarn or tar twine is used for tying purposes the trees must be first bandaged, or the bark will soon be badly cut.

FRUIT FORCING.

MELONS.—Plants swelling their fruits in the early house will require to have supports placed for them. Half-inch deal boards, 6 or 7 inches square, with a hole through each corner, and suspended by four pieces of string or copper wire from the trellis in a slanting direction to prevent water lodging, may be employed for the purpose. Pieces of slate with holes drilled in the corners are preferable to wooden supports, and glass would be still better. Remove all flowers from such plants; also superfluous growths, stopping and tying as necessary. See that the plants do not suffer through insufficient supplies of water, affording weak liquid manure occasionally. The evaporation troughs should be filled with liquid manure, and a good atmospheric moisture secured by damping early in the morning and afternoon, syringing the plants lightly about 3 P.M. on bright afternoons. Later plants will be showing fruit, and, unless abundant, remove the first blossoms, it being important that the female blossoms be nearly of one stage of growth. Maintain a somewhat higher temperature and dryer atmosphere during the setting, only affording as much moisture as will prevent flagging. Stop the shoots at one joint beyond the fruit, but employ the knife as little as possible during the setting period. In pits and frames a good bottom heat must still be maintained, observing the conditions previously given during setting. When the fruits are set they should be placed on a piece of slate. Look out for canker at the collar, placing a little quicklime around the stem as a preventive.

CUCUMBERS.—Those that have been bearing through the winter will need to be renovated at the roots, removing with a hand fork as much of the exhausted soil as is possible without much injury to the roots, and fill with rich lumpy compost pressed down firmly. Stopping, training, and cutting out the old growths must be followed up, and abundant waterings given as necessary. Assist plants in full bearing with copious supplies of weak liquid manure, and earth the roots occasionally. Damp the floors and other available surfaces before 8 A.M. and about 3 P.M., the foliage being syringed lightly on fine afternoons, and keep the evaporation troughs filled with weak guano water or other form of liquid manure. There ought not to be any further delay in having the blinds in readiness, so that they may be employed for an hour or two at midday, when the sun is brightest. Shading is most needed after a period of dull weather, to prevent flagging. Worms may be expelled by lime water.

VINES.—*Early Forced Vines.*—Although Vines in pots afford creditable crops of early Grapes, better results are often had by planting the Vines out in beds or borders such as are employed for Cucumbers. A span or lean-to house answers perfectly, having borders 3 to 4 feet wide and about 2 feet deep, so as to admit of 6 to 9 inches of drainage, and 15 to 18 inches depth of soil. The Vines being raised from eyes or cut-backs will need to be forwarded in another structure until the Grapes are cut. These being ripe in March or early April will be off by the close of April or early May. The Vines that have fruited are cleared out, fresh soil is placed in the borders or beds, and the Vines that are to fruit the following year are planted at 27 to 30 inches apart. If they have made considerable progress, but are not root-bound, they may be turned out with the ball entire, firming the soil well about them, and watering well. If in small pots they should be disentangled and the roots spread out. Turfy loam with an admixture of about a tenth of old mortar rubbish forms a suitable compost, adding about a quart of some approved fertiliser to every bushel of soil. Manure can readily be given as a mulch or in liquid form. The canes being trained near the glass will make short-jointed wood. Almost any amount of vigour can be had by encouraging the laterals, but not allowing them to interfere with the principal leaves; indeed under good treatment they will make canes like walking sticks, with eyes like nuts, and being as much under control as Vines in pots they can be matured so as to be ready for starting by late October or early November. By this plan the root action is considerably extended as compared with Vines in pots. The Vines are taken up after fruiting, as is the case with early fruited pot Vines, treating them as annuals. Cut-backs are very much the best for treating in this way.

Grapes Ripening.—The fruit swells considerably after commencing to colour. In order to ensure a full swelling of the berries inside borders should have a thorough watering and mulching early on a fine day, ventilating freely to allow excessive moisture to escape. A full crop of early Grapes is a great strain on the energies of the Vines, and through it in early forcing perfection in colour is not always obtainable, much may be done by a liberal and constant supply of warm dry air combined with a moderately low night temperature, but the temperature must be well maintained by day—70° to 75° from fire heat, and 80° to 85° with sun heat. When hard forcing is practised red spider usually makes its appearance, and should be destroyed by painting the pipes with a mixture of sulphur and skim milk. Care, however, must be taken not to use too much, or it will act injuriously upon the skin of the berries and spoil their appearance.

Succession Houses.—Attend to thinning the bunches and berries. Stop and remove laterals, especially where there is not room for extension, as to allow them to extend considerably, or so as to necessitate large reduction of foliage at one time, results in a check, very often inducing shanking at a later period. See that the borders have plenty of water, and weakly Vines will be benefited by tepid liquid manure. Vines swelling their fruit should have a moist atmosphere, damping available surfaces two or three times a day, and if liquid manure be used at the latest damping it will improve the Vines and act as a check to red spider. An ounce of the ammonia manures to a gallon of water is suitable. Syringing the Vines must not be practised after the Grapes are set.

Late Vines.—Disbud and tie out these as they require it. Close the houses early in the afternoon with sun heat, and maintain plenty of atmospheric moisture by frequently damping available surfaces. They are now making rapid progress.

Young Vines.—Those planted last spring will now be breaking naturally, and when the buds have grown about half an inch a little fire heat will prove beneficial, especially on cold days. Remove all buds except one at each break, retaining the strongest, and crop lightly, but supernumeraries may be weighted with as much fruit as there is prospect of their bringing to maturity,

PINES.—Plants started into fruit early in the year are fast approaching the flowering period, and will be benefited by an occasional sprinkling overhead at the time the house is closed, but when in flower they must not be so treated. The foliage being as yet tender, it will be desirable in the case of houses with large panes of glass to afford a slight shading for an hour or two in the hottest part of the day for a few weeks until the foliage becomes inured to the sun's influence. When the flowering is over the fruit will advance rapidly if the roots are in good condition, and plentiful supplies of weak liquid manure will be requisite. Attend to ventilating early in the morning, commencing when the temperature is at 80°, and closing at 85° with sun heat. Keep the atmosphere moist when the house is closed, the bottom heat steady at 80° to 90°, the night temperature 70°, and 75° by day artificially. As soon as the suckers appear remove all except one to each plant.

THE BEE-KEEPER.

SPRING WORK.

THE busy time of the bee-keeper's year is now fast approaching. The fast lengthening days betoken the near approach of flower-clad fields and honey-yielding blossoms. It is now that full and complete preparation for the long-expected honey flow must be made—if a great part of the work has not already been done during the past dreary months when the frost-locked earth has forbidden outdoor labour in the field or garden. Sections should at once be purchased, and after being carefully fitted with the best super foundation, these may be arranged in crates, and stored away ready for instant use when the stocks grow strong and honey is freely coming in. Boxes of frames must also have our care if we desire to obtain our surplus in a liquid form instead of in the pure white comb. The combs in use last year have, of course, been carefully preserved, and will be simply invaluable some six weeks hence, because while equally as useful as new built combs, they are more able to withstand the strain put upon the cells when the honey is dragged out by the extractor now in general use.

If there are no frames of ready built combs available, then full sheets of foundation may with advantage be used, and if "wired foundation" is used the combs will have more strength, and will be therefore less liable to break out from the frames when being extracted from at the close of the season. It it is preferred, "wired frames" may be used instead of the "wired foundation" with much the same result. It is not absolutely necessary to use the wire at all, for good foundations may be used alone, and the combs need not be destroyed by the extractor provided that the bee-keeper carefully regulates the pace, and does what he can to minimise the risk of breakage. In the hands of a novice the extractor does, however, woeful mischief in many cases where the combs are new and therefore easily broken.

It occurs to me that many have asked as to the pace at which

an "extractor" should be worked. There is no fixed rule, but the frames should never be made to revolve faster than is absolutely necessary for throwing out the honey. The pace should be kept slow at first, and gradually increased until the honey is heard to freely "spit" against the sides of the barrel, when no further advance in speed should be made until the cells on both sides of the comb are comparatively empty. The fuller the comb the greater the strain. This is an important point to remember. It is also unwise to entirely empty one side of a comb before turning it and taking some honey from the cells on the opposite side. The frames must also be placed close to the outside of the cages and against the wire. There is a tendency to draw the centre of the comb towards the outside, and therefore unless the comb presses close to the wire frame this gradual drawing out will break up the centre of the comb. These points are far more important when using new combs, because an old comb will stand far greater wear and tear without any real damage.

The simplest honey extractor is the best. If an increase in the number of stocks is desired preparations must at once be made for receiving the swarms when they come, otherwise there will be a considerable waste in fitting up hives some fine day, when half a dozen stocks send forth their clouds of emigrants when they are least expected to issue.

Many bee-keepers are no doubt beginning to feel anxious as to the state of their stocks. At the time of writing no thorough examination has yet been possible, but if we may hazard a guess founded on observations made on fine warm days some weeks ago we should say that on the whole the winter has been preservative of bee life. The weather has been not of the severest type perhaps, but sufficiently hard to prevent frequent flights, and yet occasionally days have occurred most opportunely when every stock was able to take a cleansing flight with safety. Experiments have been made in wintering stocks on the cold and warm systems, but it is at present, on account of the severe weather, impossible to give the results in either case. At the earliest possible opportunity every stock must be examined, and if necessary feeding must be at once commenced. In fact, even now, if a stock is known to be short of store, warm syrup must be administered or a piece of candy laid upon the tops of the frames; but unless there is a great doubt of the sufficiency of the food supply no stock should be disturbed at all until warm weather invites us to make a thorough examination. This done, the necessary steps should at once be taken to remedy any actual or possible mischief; and then, after wrapping every stock up as warmly as possible, no future disturbance should be necessary for a considerable period, unless it is intended to stimulate the stocks by feeding gently but continuously until the natural supply takes the place of the artificial. Other things being equal, the stock least often opened will be the most prosperous.

We may perhaps be allowed to wish the bee-keepers of the world a good harvest, and we may, at any rate, comfort those who are somewhat despondent as to the weather we are likely to experience during the coming season by reiterating what has been said in the past, and is no less true in the present, that unless the season is exceptionally bad honey will be obtained by the man who manages his bees upon practical principles and knows when to do a thing, and also has the knowledge when to leave well alone.—FELIX.

QUEEN INTRODUCTION—THE HALLAMSHIRE LAW.

"A LANARKSHIRE BEE-KEEPER," page 227, thinks I am not entitled to all the honour in connection with the above, and considers the late Mr. T. W. Woodbury was the author, and quotes him as follows:—"The only safe method is to deprive the bees of the power of raising a successor to the one deposed."

Now, with all due deference to our friend, and respect to the memory of Mr. Woodbury, I must beg to point out that the above is not the "Hallamshire law," it is only part of it; there is also one other condition—viz., the bees must have had time to realise the fact that, in addition to being queenless, they are hopelessly without means of rearing a successor; and they do not arrive at this stage, when in possession of combs, under thirty hours. But to be on the safe side I have fixed the minimum in the law at forty-eight hours.

I have never claimed to be the first to successfully enthrone queens in accordance with the "law;" the honour of this belongs to M. de Reaumur. He was also the first recorded person who introduced an alien queen to strange bees. Like many other observers, he deduced wrong conclusions from his experiments. Huber relates these cases, and criticises them under date 30th August, 1791, in such a way, one would think he knew all about the "law."

The late Mr. Woodbury was probably the next person who really took the subject up in earnest, and no doubt many times succeeded when the bees had been deprived of the means of rearing a successor long enough. But there is no evidence that he ever grasped the importance of this condition; if he had, he would not have failed to impress it on everyone. As it was, he and his pupils thought that all that was, or should be, necessary, was to deprive the bees of the power of raising a successor to the one deposed, when they would accept another as soon as they had discovered their loss. Thus the matter was left; then came the cages to gradually let the bees become acquainted with their new mother. Then it was noted by some that when the bees were old and had been long queenless, the cages were very unsafe, some going so far as to assert that such bees could not be re queened.

I think I have now made it clear that the "law" has unconsciously been used to introduce alien queens for upwards of 100 years. What I claim as my discovery is the "law," just as Newton discovered the law of gravitation. When a bee-keeper has it firmly engrafted on his mind he will find many ways to apply it. Moreover, it is the only means by which a queen will be accepted by the bees as the mother of the hive at the moment of her introduction.—A HALLAMSHIRE BEE-KEEPER.



*** All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Books (*J. G. H., New Jersey*).—We have no copy of "Blaine's Canine Pathology" in our library, and have failed on inquiry to ascertain where the work can be obtained. We mention the title in case any of our readers can give you the desired information, with the price of the volume.

Chrysanthemum Sport (*N. J. S.*).—It is simply a reversion to Queen of England, the variety from which Empress of India originally sported.

Kew Gardens (*G. W. H.*).—Write to the Curator, Royal Gardens, Kew, stating what you desire, when the necessary forms will be sent to be filled and returned.

Liquid Manure (*A. M.*).—We do not use boiling water in preparing liquid manure, as it would facilitate the escape of ammonia, which it is desirable to retain.

Insecticide (*J. P.*).—We should exceed our duty by complying with your request. It is for vendors themselves to advertise their wares if they think good to do so. Nor are we justified in publishing the full addresses of correspondents who do not supply them for that purpose.

Vines from Cuttings (*F. J.*).—You stated quite clearly that all the eyes were cut out, but it appears you made a mistake. Select those plants that are making the strongest and best growths, taking up one only from each to produce a stout cane that will ripen early in the autumn, regardless of the method adopted in preparing the cuttings.

Consumption of Fuel (*J. H. S.*).—Your letter shall be answered in an early issue, and in order that our reply may be well founded we are having a comparison made of the quantity of fuel consumed in a garden in which the extent of piping is considerable, and the question of fuel a serious item from its being much more costly than in your district.

Double White Mignonette (*T. S.*).—The flowers you send are unusually fine, being white, large, double and sweet. It is a pity that

care is not taken to preserve the undoubtedly good character of the variety, which, as you present it, far exeels any other so-called White Mignonette that has come under our notice. You have evidently exercised judgment in saving the seed, and skill in cultivating the plants.

Strawberries (*F. W.*).—We should choose the plants with the best crowns and the most fibrous roots, and if about three good crowns were attached to one rootstock we should not separate them; indeed, those taken up singly we should probably plant triangularly a few inches asunder, and the triplets at the ordinary distances assigned to single plants. By thinning the crowns and replanting old Strawberries in enriched soil excellent crops of fruit were obtained by the late Dr. Newington.

Peas in Trenches (*F. J.*).—Though a foot is a convenient and suitable width for a trench, it does not follow that it is necessary to sow the Peas all over a surface of that width, though there is no objection to the plan. You can, if you wish, make a level base 6 inches wide in the trench, and scatter the Peas all over it about an inch apart, these being new, heavy, and good. A narrow strip means a channel drawn with the corner of a hoe, and V-shaped, which is the reverse of good for sowing Peas in, though it answers very well for Onion seed.

Heating (*J. R. G.*).—We have not had experience with the boiler you name. If you can refer us to an advertisement of it in our columns we will endeavour to obtain information on the subject. The consumption of coal does not so much depend on the extent of piping to be heated as on the dimensions of the house and the temperature that has to be maintained. The setting of saddle boilers with the arrangement of the pipes are also important factors in the case. The weekly consumption of fuel you name appears excessive for maintaining a temperature suitable for greenhouse plants.

Tar on Hot-water Pipes (*A Journal Reader*).—We have no doubt that a serious mistake was made in coating the hot-water pipes with "coal tar varnish," though you do not appear to be responsible for it. The effluvium from coal tar is highly injurious to plants, and we have known serious consequences result from the use of tar even when it has not been applied to the hot-water pipes but only to the stages on which plants had been afterwards arranged. We are unable to point out any safe and easy method of removing the varnish, and suspect it will have to be scraped off, and the pipes washed with turpentine; but if any of our readers can state how the pipes can be best cleansed we will readily publish the information. A mixture of lampblack and linseed oil has been many times mentioned in this Journal as suitable for coating hot-water pipes in plant houses.

Peas Failing (*A Young Gardener*).—When peas are old some of them decay without germinating, others may germinate and attempt to grow, but perish in the attempt. We can distinguish old from new peas, but it is not easy to make the distinction clear on paper. Old wrinkled peas are much shrunk and have a dull dead appearance, lacking the freshness of life; smooth white peas assume a yellowish hue when old. Peas sometimes fail to grow freely when the soil is very cold and wet, the roots decaying, and we have known coal ashes injurious, these varying. Why not test the seed by sowing some in a pot in a greenhouse? A hotbed is scarcely a fair test, as we have known seeds to germinate freely and growth follow in a brisk moist heat that failed in the open ground. If you raise plants in pots now under glass, starting them in heat, then removing them to a lower temperature, and when ready and in good condition planting out, you may not be very late in gathering. They should be planted when the ground is in favourable condition, placing a compost consisting largely of leaf soil in contact with the roots to encourage their quick and free extension, at the same time protecting the tops from cutting winds with a few evergreen sprays or such other shelter as can be devised for the purpose.

Peach Trees Failing (*W. J. W.*).—Judging from your letter and the sample of leaves sent we fear your Peach and Nectarine trees are in a hopeless condition. When the leaves assume a silvery appearance the trees are liable to go off any time. They are decaying internally, and if you cut off the branches bearing the silvery leaves you will find that only a thin portion of the outer wood is alive. When in this condition it is only a question of time before the trees die. We should say your trees are poisoned, either from the soil being impregnated with salt or from the sulphurous acid from the adjoining works. If trees grow outside without showing signs of injury and decay, then you must turn to some other cause for the trees dying in the house. If they suffer only from the soil being impregnated with salt, then the difficulty can be overcome by a slight outlay in border preparation; but if death is caused by sulphurous acid there is but little hope of success, even if you renew the border and plant afresh. If salt is the cause, we advise you to remove the whole of the soil to a depth of 2 feet 3 inches, and thoroughly concrete the base, allowing the bottom to slope from the back to the drain in front. Six inches of good drainage will be ample, and this will leave 18 inches for soil. The soil should be secured from a distance, where you are certain it is free from salt. As you have a base of marl the bottom of the border should have been concreted in any case. We have seen trees fail repeatedly through their roots getting into the marl. They are then too far from the surface, too cold, and often too wet for the well-being of the trees. It is difficult for us to say what is actually the cause of failure in your case, but we think the most probable cause is the salt, or that and the sulphur combined. If you can send further particulars that may further enable us to help you, we shall be very glad to do so.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*W. S.*).—It is Deutzia crenata flore pleno. (*T. P.*).—A variety of Cœlogyne cristata, but not so good as such forms as maxima or the Chatsworth variety. The shrivelling of the pseudo-bulbs is caused by the flowering.

COVENT GARDEN MARKET.—April 4th.

A very dull week. Prices of hothouse goods lower.

FRUIT.

	s.	d.		s.	d.		s.	d.		s.	d.
Apples, ½ sieve	2	6	to	4	6	Oranges, per 100	2	0	to	5	0
Nova Scotia and Canada barrel	10	0		18	0	Pears, dozen	3	0		6	0
Cobs, 100 lbs.	45	0		0	0	Pine Apples, English, per lb.	0	0		0	0
Grapes, per lb.	3	6		6	0	St. Michael Pines, each	3	0		5	0
Lemons, case	10	0		15	0	Strawberries, per lb.	6	0		8	0

VEGETABLES.

	s.	d.		s.	d.		s.	d.		s.	d.
Artichokes, dozen	1	0	to	2	0	Lettuce, dozen	0	9	to	1	3
Asparagus, bundle	8	0		0	0	Mushrooms, punnet	0	6		1	0
Beans, Kidney, per lb.	1	6		0	0	Mustard and Cress, punt.	0	2		0	0
Beet, Red, dozen	1	0		2	0	Onions, bunch	0	3		0	0
Broccoli, bundle	0	0		0	0	Parsley, dozen bunches	2	0		3	0
Brussels Sprouts, ½ sieve	3	6		4	0	Parsnips, dozen	1	0		0	0
Cabbage, dozen	1	6		0	0	Potatoes, per cwt.	4	0		5	0
Capsicums, per 100	1	6		2	0	,, Kidney, per cwt.	4	0		0	0
Carrots, bunch	0	4		0	0	Rhubarb, bundle	0	2		0	0
Cauliflowers, dozen	3	0		4	0	Salsafy, bundle	1	0		1	6
Celery, bundle	1	6		2	0	Scorzonera, bundle	1	6		0	0
Coleworts, doz. bunches	2	0		4	0	Seakale, basket	1	3		1	6
Cucumbers, each	0	4		0	7	Shallots, per lb.	0	3		0	0
Endive, dozen	1	0		2	0	Spinach, bushel	1	6		2	0
Herbs, bunch	0	2		0	0	Tomatoes, per lb.	1	0		1	6
Leeks, bunch	0	3		0	4	Turnips, bunch	0	4		0	6

PLANTS IN POTS.

	s.	d.		s.	d.		s.	d.		s.	d.
Aralia Sieboldi, dozen	6	0	to	12	0	Fuchsia, dozen	0	0	to	0	0
Arum Lilies, dozen	9	0		15	0	Genista, per dozen	6	0		12	0
Arbor vitæ (golden) dozen	6	0		9	0	Hyacinths, dozen	5	0		10	0
Azalea, dozen	24	0		42	0	Hydrangea, dozen	0	0		0	0
Cineraria, dozen	8	0		12	0	Lilies Valley, dozen	18	0		24	0
Cyclamen, dozen	12	0		24	0	Lilium lancifolium, doz.	0	0		0	0
Dielytra, per dozen	12	0		18	0	Marguerite Daisy, dozen	9	0		12	0
Dentzia, per dozen	6	0		9	0	Myrtles, dozen	6	0		12	0
Dracæna terminalis, doz.	30	0		60	0	Narciss, per dozen	8	0		10	0
,, viridis, dozen	12	0		24	0	Palms, in var., each	2	6		21	0
Erica, various, dozen	9	0		18	0	Pelargoniums, dozen	12	0		18	0
,, ventricosa	18	0		24	0	,, scarlet, doz.	6	0		9	0
Euonymus, in var., dozen	6	0		18	0	Poinsettia, dozen	0	0		0	0
Evergreens, in var., dozen	6	0		24	0	Solanum, dozen	9	0		12	0
Ferns, in variety, dozen	4	0		18	0	Spirea japonica, doz.	9	0		15	0
Ficus elastica, each	1	6		7	0	Tulips, dozen pots	6	0		9	0
Foliage Plants, var., each	2	0		10	0						

CUT FLOWERS.

	s.	d.		s.	d.		s.	d.		s.	d.
Abutilons, 12 bunches	3	0	to	6	0	Lilies, White, 12 bunches	0	0	to	0	0
Anemone (Fulgens), 2 bunches	3	0		6	0	,, Orange, 12 bunches	0	0		0	0
Anemones (French), 12 bunches	2	0		4	0	Lily of the Valley, 12 sprays	0	6		1	0
Arum Lilies, 12 blooms	4	0		6	0	Mignonette, 12 bunches	3	0		6	0
Azalea, 12 sprays	0	6		1	0	Narciss, white (French) 12 bunches	2	0		4	0
Bouvardias, bunch	0	6		1	0	Narciss, various, 12 bchs	3	0		6	0
Camellias, 12 blooms	1	0		4	0	Pelargoniums, 12 trusses	1	0		1	6
Carnations, 12 blooms	1	0		3	0	,, scarlet, 12 trusses	0	6		0	9
Chrysanthemums, 12 bchs.	0	0		0	0	Primroses, 12 bunches	1	0		3	0
,, 12 blooms	0	0		0	0	Primula (single), bunch	0	4		0	6
Cyclamen, 12 blooms	0	6		1	0	,, (double), bunch	0	9		1	6
Daffodils, Double, 12 bchs	3	0		6	0	Roses, Red, 12 blooms	2	0		6	0
,, Single, 12 bchs	3	0		9	0	,, (indoor), dozen	3	0		4	0
Daisies, 12 bunches	2	0		4	0	,, Tea, dozen	1	6		4	0
Epiphyllum, 12 blooms	0	4		0	6	,, red, dozen (French)	1	6		3	0
Eucharis, dozen	4	0		6	0	,, yellow	3	0		6	0
Gardenias, 12 blooms	4	0		8	0	Snowdrops, 12 bunches	1	0		3	0
Hyacinths, Roman, 12 sprays	0	6		1	0	Spiræa, bunch	0	6		1	0
,, French, 12 bunches	2	0		4	0	Stephanotis, 12 sprays	0	0		12	0
Lapageria, coloured, 12 blooms	1	0		1	6	Tropæolum, 12 bunches	2	0		3	0
Lilium longiflorum, 12 blooms	6	0		9	0	Tuberoses, 12 blooms	2	0		3	0
Marguerites, 12 bunches	2	0		6	0	Tulips, dozen blooms	0	6		1	0
						Violets, 12 bunches	1	0		1	0
						,, (French), bunch	1	6		2	0
						,, (Parme), bunch	2	0		3	0
						White Lilac, per bunch	5	0		6	6



RESULTS.

RESIDUE FROM MANURES—ESSEX EXPERIMENTS.

We were recently offered a manure bearing the somewhat singular title of Vitriolised Bones, with an assurance that it was a

perfect manure adapted for the particular requirements of a crop at the different stages of growth in this way. It consisted of fine bone dust, coarse particles of bone, and still large pieces of bone; the dust being absorbed by the plant when quite young, the coarse particles being next turned to account, and so on. The impression which the statement of the vendor was intended to convey to us evidently being that a crop would exhaust all the manurial constituents of such manure, and there would be no residue left for the benefit of the next crop. Now, this was so entirely in accord with the popular notion that artificial manure has nothing of a permanent or rather durable property belonging to it, that it would really seem to have had its origin with the dealers in manures. Whether bones treated with vitriol are sold as vitriolised bones or superphosphate they ought not to be used alone, but should be mixed in due proportion with other manures, as we have repeatedly explained.

The tendency of all recent experiments is to show that there is a residue in the soil from all manures after the crop to which they were applied was matured, and one of the lessons taught by such experiments is that land manured and cropped this year will require some manure, but a smaller quantity of it, next year. Another lesson of equal importance is that chemical manures are more economical and more efficient than farmyard manure, provided they are procured pure, carefully blended, and rightly applied. It is high time that the careless reckless use of mysterious compounds was ended, and that every farmer had sufficient scientific knowledge to enable him to treat the soil and his crops in the right way.

In the Essex field experiments of last year special attention was given to the residue question, and we find it stated in the report that "It was the general opinion of the Experiments Committee that it would be interesting to ascertain how far manures applied for the Mangold crop of 1886 might affect the succeeding corn crop. Accordingly the boundaries of the plots were carefully preserved, and a crop of Oats was sown in the spring of 1887 without the application of any manure whatever, either dung or artificials." The result showed clearly that there was sufficient residue to afford a fair corn crop on every plot, but some plots gave more than others. The largest crop, which gave 70 bushels of Oats and 1 ton 12½ cwt. of straw per acre, was from a plot which in the previous year gave 26 tons of Mangolds, and the manure for which was 12 tons of dung, 3 cwt. of superphosphate, and 2 cwt. nitrate of soda applied at seed time. The increase in the yield of Oats as compared with the plot that received dung alone was nearly 4¾ bushels of grain and 3 cwt. of straw per acre. Close to this came, with nearly 69 bushels of grain and 1 ton 12 cwt. of straw, another plot manured with a similar quantity of dung and superphosphate, and 1½ cwt. of sulphate of ammonia applied as a top-dressing in July. No special advantage could be claimed for this July application of ammonia, for a similar result was obtained upon another plot where the ammonia was applied early. The report adds that "Generally it may be said that the heavier dressings not only paid best in the Mangolds crop, but also gave good results in the succeeding Oat crop, the heavy crops of Mangolds being followed by heavy crops of Oats."

Soil so cropped with corn after roots might be regarded as practically exhausted, and it would require a full dressing of manure this year. Experience has shown that if a moderate quantity of nitrogenous and mineral manure had been sown with the Oats, not only would there have been from ten to twenty bushels more grain, and 8 or 9 cwt. more straw per acre, but the exhaustion would have been avoided, and a full dressing of manure could hardly have been necessary this year. No doubt in a very wet winter some loss of nitrogen stored in the soil does occur, and this should be taken into account in a calculation of quantities in spring. This one fact alone shows how difficult it is to prepare formulæ for general adoption. The influence of local circumstances cannot be ignored, but must be taken fully into account if we would avoid the wasteful use of manures. For this reason, if for no other, we would urge every farmer to try and ascertain for himself the nature and requirements of the soil of his particular farm. One general rule we may very safely lay down is, that while there is a residue left in the soil from all manures, yet a certain quantity of manure may be applied to it profitably for every crop year by year.

WORK ON THE HOME FARM.

The ploughs have been kept going upon land where sheep have been folded upon Swedes, in order to have it ready for Barley as soon as possible after the sheep folds were removed. There has been ample time for doing this, as it was impossible to sow any spring corn during March, snow or rain keeping the drills off the land throughout the month. On light land and mixed soil the land has been got ready for Mangolds—in many instances quite ready, the muck having been carted, spread in the rows, and the soil turned back over it so that the sowing of seed can follow on closely after Barley sowing, when we do get that long-delayed work done. The advantage of autumn culture will now be fully realised, for where the soil was clean immediately after harvest, and the ridging for roots was then done, the work now is light and easy. No doubt all seed will germinate quickly in the moist warm soil, and growth will be so free that we shall have to be on the alert with horse and hand hoes to keep down weeds. This work of keeping the land clean is so important that there should be no hesitation about the extra expenditure involved for labour. We have kept our weekly labour bills lower throughout the past winter than we have ever done before, and can now afford to employ as many extra men as we require. By all means keep down weeds, especially Charlock, and let the crops derive full benefit from the fertility of the soil. Can anything be more wasteful and extravagant than to expend heavy amounts for manures and then to suffer weeds to rob the soil of it? It is all very well to complain of low prices for farm produce. We cannot alter that, but we can effect much improvement in our practice upon the land. One of the most incessant grumblers we know had his Barley so infested with Thistles last year that the seed was blown all over the parish, and his lazy, thriftless habits will this year prove a curse to his neighbours as well as himself. Now this man wanted to hire another farm for his son 1st Michaelmas, but his bad practice was so notorious that although there were plenty of farms vacant he was unable to hire one of them. We have had applications for land under the Allotments Act in several parishes, and are quite willing to let any labourer have land who has sufficient energy and perseverance to cultivate it; but so far our experience of allotments has certainly been unsatisfactory.

OUR LETTER BOX.

Vetches (*Inquirer*).—When they are well above the surface and growing freely, apply by broadcast sowing in showery weather 2 cwt. nitrate of soda per acre. If the rainfall of your district is low and very uncertain, it would be better to drill the nitrate of soda in with the Vetch seed.

Renovating Pasture (*T. R.*).—The present is a very good time for sowing grass seeds in your field, and the most practical advice we can give you is to state the present condition of the pasture, the nature of the soil, and the acreage to be renovated, to a seedsman or firm who pays special attention to this subject, and you may rely on receiving the right quantity of a suitable mixture for effecting your purpose.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE. 1888. March.	9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of soil at 1 foot.	IN THE DAY. Shade Temperature. Max	IN THE DAY. Shade Temperature. Min.	IN THE DAY. Radiation Temperature In sun.	IN THE DAY. Radiation Temperature On grass	Rain
	Inches.	deg	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 25	29.106	45.8	3 0	S.W.	37.8	44.1	33.0	63.2	31.7	0.200
Monday..... 26	29.057	38.6	38.4	S. S.	37.8	42.9	31.1	70.4	26.2	0.375
Tuesday .. . 27	29.077	35.3	34.3	N.W.	38.0	4 8	52.4	49.5	31.2	0.123
Wednesday.. 28	28.824	43.1	4 9	E.	37.7	52.2	32.9	80.4	27.1	0.194
Thursday 29	28.836	45.2	41.1	S.	38.6	51.5	38.3	88.6	30.3	0.023
Friday 30	29.214	42.3	40.8	S.W.	39.3	50.8	37.9	79.0	32.4	0.031
Saturday 31	29.7 4	4 3	38.9	N.	39.9	46 4	37 7	62.8	36.6	—
	29.134	40 2	38.6		38.4	47 7	34 8	74.6	30.9	0.979

REMARKS.

25th.—Dull and damp morning; fair afternoon with some sunshine; rain and snow in evening and night.

26th.—Snow and rain from 5 A.M. to 10 A.M; dull morning with spots of rain, wet afternoon and night.

27th.—Cloudy day, with a few flakes of snow at 4.30 P.M.

28th.—Wet till 10.30 A.M., then generally fine and bright, but with one or two slight showers.

29th.—Bright pleasant morning; fair till 2.30 P.M., then rain, and unsettled after.

30th.—Fair, with occasional sunshine in morning; dull and showery after 3 P.M.

31st.—Dull and damp early; fair day.

A dull, damp week with very low barometer, snow and rain. Temperature rather higher than in the two previous weeks, but still below the average. March has been a wet month, the total yield of snow and rain being 3.34 which is more than twice as much as the two months of January and February.—G. J. SYMONS.

FRUIT CULTURE UNDER GLASS.

MR. T. F. RIVERS' essay on the Orchard House, the concluding portion of which appears on another page, is much too valuable to be confined to even a large and intelligent Birmingham audience, and we have had pleasure in according the important contribution to gardening literature the wide circulation that it undoubtedly merits. The subject is treated exhaustively ; indeed, no one but Mr. Rivers could have prepared such an essay, because no one else has had anything approaching an equal experience in the routine of fruit culture under glass as it is conducted at Sawbridgeworth. It is there the first orchard house was built plainly and inexpensively, and the large structures with boarded sides and glazed span-roofs, erected thirty years ago, still remain sound. There can be no doubt that a handsome profit has been derived from these simple yet serviceable erections by the sale of the fruit alone that has been raised in them, apart from the sale of trees ; and it will be safe to say that if no trees were sold that this method of producing fruit of the first quality for market would be, as it has been, lucrative. Though the great majority who grow fruit do not do so as a means of income, but for home requirements and enjoyment, it is not the less satisfactory to know that the method adopted is well founded, and this can only be determined on commercial principles.

That the orchard house method of growing fruit, especially Peaches and Nectarines, as conducted at Sawbridgeworth is a distinct success cannot be doubted by any person competent to form an opinion on the subject after inspecting the work in operation. But facts are more conclusive than opinions, and it is a very hard fact that house is being added to house in this great emporium of trees and fruits, not for growing the former primarily for disposal as such, but chiefly for the crops they afford, though the trees themselves that have had a sojourn under glass are essentially better and more fruitful than those grown entirely in the open ; indeed, those grown in pots on the Rivers' method are alone really suitable for orchard house culture. There is nothing grown to waste in these trees, for all growth that is not wanted is promptly suppressed, consequently all that remains is stout and hard, and at this season of the year covered with fine blossoms soon to be followed by far more fruit than the trees could perfect, however generously they might be treated. But new houses are being erected for fruit production primarily, and this would not be done if the practice were not remunerative. It is true Mr. Rivers is a gentleman of property, and can afford to indulge in luxuries, and perhaps does indulge in them. His Orange culture is possibly a source of enjoyment rather than of profit to him ; at least, as regards the crops, for the sale of young trees may sweeten the luxury, and of these there is no doubt the finest stock in Europe ; but in regard to Peach and Nectarine production in the houses erected and in the course of erection we see Mr. Rivers, as a man of business, observant of every detail, and watchful in every item of expenditure, studying simplicity and economy to the fullest extent consistently with efficiency, as closely as if his daily bread depended on the work. This is strictly and severely a business matter, and the under-glass culture of trees in pots for the sake of the fruit produced is being extended for the best of all reasons—because it pays.

Walls could be built for shelter and for providing warm surfaces for fruit production, and Mr. Rivers would without doubt build them if he could rely on a good return for his outlay ; but he cannot. Walls have been tried and found wanting. Their cost is too great and the returns from them too uncertain to warrant his indulging in such costly luxuries ; and he prefers the shelter of orchard houses, whether as boundaries in lieu of walls or as independent structures in addition to them. The question of glazed boundaries to gardens is not new. It has been regarded as a fanciful notion ; but it is very much more than that, and cannot be dismissed as visionary with a waive of the hand. A gentleman about to surround his garden with walls, after counting the cost and estimating probable results, changed his plans after inspecting glazed boundaries, and ascertaining the cost of erection and comparing it with their capacity for producing fruit under good management with constancy. But the best evidence in favour of glass *versus* bricks, or in addition to a limited extent of masonry, is found in the great fruit-growing establishment of Mr. Philip Ladds at Swanley. The proprietor desiring boundary protection on two sides of his land might have built walls and covered them with fruit trees, but instead of doing so he built span-roofed houses, one nearly 700 feet long and the other upwards of 800 feet. These will give a good return for outlay and pay for themselves in a few years, but walls would not. Glazed boundaries are therefore not fanciful luxuries, but stern realities, and their extension is probably only a question of time.

Any visitor to Sawbridgeworth a week ago would have been satisfied both with the attractiveness and usefulness of orchard houses. One, well heated, 230 feet long, was wholly occupied by Peach and Nectarine trees in pots, except two rows of young Vines growing vigorously on the hot water pipes along the sides. The trees in the centre are models of culture. They vary in size, but are uniform as regards health and crops, every tree studded with fruit the size of walnuts, and it is not too much to say the contents are worth more than the building, though it is substantial and nearly new. The sight presented by that house at the present time is, so far as we know, unequalled. In other houses where forcing is not resorted to the trees were in flower—dwarfs, standards, and pyramids—several of the latter about 9 feet high, pictures of beauty. A single row of 4-inch pipes runs through most of the large houses, not for excluding frost in winter, but for drying the air in damp weather in autumn and spring. There is no trouble in any of these houses by the casting of the buds, whether the trees are planted out or not. Premature loss of leaves through the attacks of red spider in summer is one of the great causes of the evil, and is avoided. The use of the camel-hair brush is resorted to for insuring a full set of fruit, and the crops in these houses never fail. Not an aphis is to be seen, and no plants allowed in the structures that are likely to communicate insects. One was rendered sweet by masses of Wallflowers and Hyacinths, but Roses are excluded. Ants, which eat off the anthers of the blossoms, are baffled in a simple manner. The stems of the trees are encircled with 3-inch bands of chalk, this being rubbed on thickly, the particles are so loose that they fall as soon as touched by the feet of the little crawlers, and down they come as fast as they attempt the ascent.

Some houses are entirely unheated, and in them Pears, Plums, and Apples have set their crops, and the trees which are in pots will be plunged outdoors to ripen, or the majority of them, for there is not room under glass for half of them to perfect their growth, and overcrowding is fatal to success in orchard house management.

The walk through the Orange house is a delightful promenade, there being a wealth of fragrant blossom, and golden fruits in abundance of a quality far excelling that of the best imported Oranges. The Cherry house with its boarded sides is unheated, and the ventilators open for retarding the blossom. The finest of Cherries are produced in this simple structure yearly, and a supply

afforded during a period of two or three months. As a rule the means of affording a little heat should be provided in orchard houses, but when this is not done the safe course is to retard the expansion of blossom as long as possible. The opposite course has been adopted in some gardens and brought failure, and the houses condemned when the management was often at fault; but owners of houses for fruit culture should recognise the fact that they will always pay for piping, not for heating regularly for preserving plants that are out of place in orchard houses, but, in conjunction with good management, for insuring good crops of fruit. Mr. Rivers' essay is a simple record of practice, and his teachings intelligently followed, must bring success.

ROYAL HORTICULTURAL SOCIETY.

SECTIONAL COMMITTEES.

Mr. A. H. Smee, who contributes a generally excellent letter on page 352, suggests the desirability of dividing the Floral Committee into sections, in order that the merits of the different kinds of plants submitted may be the better determined. That either the present Committee will have to be divided into sections, or sub-committees formed, bringing in outside talent, appears certain. It is a question if the present Floral Committee numbers sufficient specialists for forming separate contingents for adjudicating, say on Orchids, Auriculas, and kindred plants, Chrysanthemums, and other sections. Yet specialists are undoubtedly needed, and the few on a large general Committee may easily be outvoted by the many, who may be, and are, men of ability in some branch, but who fail to see the points of merit of certain plants before them. Mistakes have been made both with Orchids and Chrysanthemums that have not strengthened the Society, and which would not have been made by half a dozen men having special knowledge of those plants. At the end of the present year there will probably be more gardeners who are Fellows or Associates of the Society to choose from. Then will be the time for a general remodelling. Shifting about and altering in the middle of the season rarely proves satisfactory, but, on the contrary, indicates instability that does not beget public confidence. Since attention has been called to slight errors, particular care will doubtless be exercised not to increase the number; and as Mr. Smee says, "for this year all measures must be of a tentative character," it will, perhaps, be best to proceed to the end without any fundamental alteration. In the meantime, suggestions can be made and discussed, and methods devised, for effecting improvements of a permanent character. A not altogether unimportant matter to determine is this—If sectional committees are to be formed, by whom and in what manner are the members to be selected and elected?

SHOWS.

Mr. Smee still appears to be of opinion that shows will strengthen the Society, and seems to regret that one cannot be held in Finsbury Circus. An exhibition there might have proved a success or it might not. Every show that has been held has been hoped to bring strength to the Society, but the fact remains that most of them, taking small and large together, have had quite an opposite effect. There is a great risk connected with exhibitions, and the Society is scarcely in a position to incur such risk. Though I am strongly convinced that a year of rest, not from scientific, useful, and administrative work, but of cessation from showing, would have found the Society much stronger at the end of the season than it will be after a term of floral gaiety, I sincerely hope I may be wrong. If shows do not attract visitors in sufficient numbers to prevent loss to a society they fail in their immediate object, though it is conceivable they may to some extent have a stimulating effect in bringing new supporters—new Fellows. It is easy, however, to over-estimate that possibility, and the experience of the past is not encouraging.

But the plan of the future is to bring the shows to the people. The idea sounds well, but will the people "come in their thousands" to see them? That is the question. It is easy to take a horse to the water, but proverbially difficult to make him drink if he is not thirsty. I shall believe the public will crowd into the hall at Westminster when I see them, and not till then. An exhibition under canvas in Finsbury Circus or in the Temple Gardens might attract a throng of visitors, and probably would, subject to two contingencies, one of which is essentially uncertain, and the other problematical—namely, favourable weather, and some exalted personage to lead the way. One or two hundred pounds might be realised by the venture (and Mr. Smee in a former letter made a special point of "gate money"); but the same amount might be lost, and loss would certainly be incurred if the show days were remarkable, as has often been the case, for torrents of rain.

If it were proved that Shows brought an influx of Fellows, and that there would be no material additions without the said Shows, that would be a strong reason for holding them, even if the gate money did not quite equal the expenses; but the most recent experience does not support that proposition. Before the first Show was held at Westminster the glad tidings were freely circulated that more new Fellows had been proposed in a month than during the whole of the preceding year. The very fact that this was made known previous to the Show is conclusive evidence that the additions were not the result of it; and it shows, moreover, there are other ways of gaining subscribers than through the agency, often costly, of shows. Existing Fellows and members of the Committees have exerted themselves, and the guinea fellowship has opened a way by which many new supporters will enter. I have done a trifle in inviting some to come in, and hope to do more. But the truth must be told that some good men are hesitating lest if they subscribe, their money, to adopt their own phrase, which appears ready for use, will be "squandered." Now that the guinea ticket is made transferable, which is exactly what was wanted, I believe many gardeners would join if they felt an assurance the money would be devoted to strictly useful horticultural purposes, such as conducting experiments and trials at Chiswick, and publishing the results as speedily as practicable, and not a year or two after their interest has departed. I do not know whether the guinea transferable ticket admits to Chiswick or not, but that privilege would be as much appreciated by most persons as the entrée to shows, and more by some, while it would cost the Society nothing. Moreover, most persons appear to like being invested with a right if they do not often exercise it.

I fully believe the Council of the Society and the advising committee will consider fully and well every step that is taken, and that they will proceed on the most prudent lines they can devise. I am one of those who think they did not make the best start under the circumstances, but no one can hope more earnestly than myself that they will make a good finish at the end of the season, and commence under happy auspices another year. The maintenance of Chiswick is the ultimate desire of most, if not all, who are identified with the Society, and I trust support will not be withheld by any who can afford to give it in the cause of national horticulture.

Mr. Smee is afraid that opening the garden at Chiswick during the fruit-blossoming period to the public on payment of a small fee would not attract many visitors. Possibly not, but the point is this—there would be nothing to lose by the venture, while attention would be drawn to the Society in that form of "popular advertising;" and not only so, but if I had any choice in the matter I would prefer taking the Chiswick proceeds of three weeks to all the clear profit that will accrue during the year from the exhibitions held in Westminster.

The Apple congress that extended over some time attracted the public to Chiswick, and was more profitable than any show that has been since held, and it ought not to be impossible to draw patronage again that would be useful.—A Fellow of the Society.

HALF-GUINEA SUBSCRIBERS.

Provincial gardeners have watched with interest, if in silence, the ways and means that have been adopted to strengthen the Society, though many have felt it beyond their reach. As gardeners represent horticulture the Society ought to represent them. Let it be Royal, but also a general Horticultural Society, then it will embrace all and not the few.

What are these half-guinea associates? They appear to be dreaded rather than encouraged. It has been recently said in a contemporary that "if you confer on the half-guinea man the same powers and privileges as on the guinea man, the latter personage will be extinguished, and on a critical vote a whole army of the least experience may carry the day against knowledge, judgment, and all that is called wisdom in human affairs." As that cannot be intended as an insult to gardeners, are we to understand it to mean that by paying another half-guinea knowledge, judgment, and wisdom are atttained? Evidently there are more brains in one's pockets than some of us think. All honour to Mr. Smee. True to all that pertains to horticulture, I hope he will not forget the workers. The true principle of giving is not what a man gives, but what he has left.—B. L.

ENTERTAINMENT TO THE EMPLOYÉS OF THE ROYAL HORTICULTURAL SOCIETY.

The entertainment recently proposed by Mr. R. Dean was held on Friday evening last at the Bolton Hotel, Chiswick. Harry J. Veitch, Esq., had kindly consented to take the chair, and was supported by Messrs. A. F. Barron, J. D. Dick, G. Deal, J. Roberts, H. Herbst, and Shirley Hibberd, Messrs. R. Dean and W. Richards taking the vice-chairs. The company was chiefly confined to the employés, and there were few visitors besides those named. An excellent supper was provided, and a

very entertaining programme of toasts and songs rendered the gathering an extremely agreeable one to all present. After the usual loyal toasts Mr. Herbst proposed "Success to the Royal Horticultural Society," which was responded to by Mr. G. Deal, whose remarks were to the effect that the Society is being placed on a better basis, and that the scheme for its popularisation is being steadily developed, giving a prospect of future success and even more good work than it has done in the past. Mr. Veitch proposed the health of the employés of the Society coupled with the names of Messrs. Barron and Dick, whom he highly complimented upon the efficient manner in which they had performed their respective duties during a long period of service. Mr. Barron in reply said, after thanking Mr. Veitch for his attendance, that he had always been favoured with a good staff of assistants, and none knew so well as himself how much they had helped him in many arduous duties.

The health of the Chairman was proposed by Mr. Shirley Hibberd in a felicitous speech, in which he referred to the gradual development of commercial horticulture of the present century and the important part Messrs. Veitch & Sons had taken in both practical and scientific departments, and the large number of plants they had introduced. He thought it augured well for the Royal Horticultural Society that they had secured the aid of such an earnest horticulturist and thorough business man as Mr. H. J. Veitch in the Society's Council for the present year, an observation that received the hearty endorsement of all present. Mr. Veitch in the course of his reply briefly traced the history of his firm from the time his great grandfather was engaged as gardener in Devonshire until he himself assumed the direction of the present business. The gradual development of the Exeter business, the fortunate employment of the Brothers Lobb as plant collectors, the migration to Chelsea, the improvement of several families of plants by hybridising and cross-breeding, such as the Orchids, the Tuberous Begonias, the Amaryllis, &c., were all referred to. Mr. Veitch thought that collecting new plants is played out, as, though there are many districts not fully explored, they are generally in the interior of countries difficult of access, and the plants obtained are subject to all kinds of dangers in transit. Recognising this some time ago they had turned their attention to hybridising plants already cultivated, and most of those present had had opportunities of judging the results attained. He concluded by adding that though, as in all commercial undertakings, £ s. d. must have the first consideration, this had not been the only moving power, but much had been accomplished by the deep personal interest taken in the work, both by members of the firm and their able assistants.

Shortly afterwards Mr. Veitch resigned the chair to Mr. Shirley Hibberd, who, being in excellent form, delighted the company with a comic song, and with several contributions from others an exceedingly successful entertainment was brought to a close. Messrs. R. Dean and W. Richards received the hearty thanks of all present, as the success attained was mainly due to their efforts.

FRUIT-GROWING IN TASMANIA.

As we are sending you some of our fruits, perhaps you would like to know a little about our gardens, especially as a few years hence you will hear a good deal more about us and see thousands of bushels of our fruit in your markets. Still your gardeners need not set their bristles up, as it will not affect them a bit, as our fruit will come in when theirs is all eaten. We are now only waiting for the ships to come with cool chambers and you shall see what fruit Tasmania can produce. Hitherto, with a few exceptions, fruit-growing has been carried on by small men, the largest gardens being eight or ten acres. But capitalists are now waking up to the fact that there is money to be made at it, and much larger orchards are being laid out. All English fruits, except Grapes, thrive splendidly. Our long sunny summers ripen and colour Apples and Pears to perfection, and moreover they keep well after gathering.

The Apricot and Peach are grown in the open orchard as standards. A good Apricot tree will yield several bushels of fruit in a good season. Our best gardens are quite equal to any in England I have seen. The trees are planted as yearlings, from 12 to 15 feet apart, the land being simply ploughed deeply before planting, then we cultivate and crop between the trees until they are six or seven years old, by which time they come into bearing. I have seen an average of a bushel per tree at six years old. We prune very hard at first, and keep our trees low, giving them a stem about a foot, then getting twelve or fourteen branches out of it, the favourite shape being the inverted umbrella with cordon branches from the stem. This form is adopted for Apples, Pears, Peaches, Apricots, Cherries, &c. We apply manure and cultivate as the trees come into bearing, digging or ploughing between them to preserve the moisture and keep the land from cracking.

The fruit grown includes a very fair collection. In Apples the Scarlet Nonpareil, Sturmer Pippin, French Crab, and Ribston Pippin have been perhaps most popular, but many others are grown. In Pears, Williams' Bon Chrêtien, Winter Nelis, Vicar of Winkfield, Gansel's Bergamot, Easter Beurré, Beurré Diel, Uvedale's St. Germain, Achan, and a few others predominate. Hitherto we have grown only for the other colonies, and the growers have obtained about an average of 1d. a lb., or 5s. a bushel, and have grown varieties which would keep and ship well.

Some of our gardens in a good season present a very pretty appearance, being simply covered with fruit. Our average crop is about 200 bushels an acre, but good gardens yield much more. A garden in the Huon district of ten acres and twelve years old turned off last year 3600 bushels, the year preceding 4600 bushels, and the year before again 3600 bushels, and the grower often gets 7s. or 8s. a bushel. This year has been very bad for Cherries, still we have had very fine fruit. I weighed some a few days ago which scaled forty-four to the pound. Raspberries in the best districts are very prolific, growing so high and strong that they have to be tied down to reach the fruit.

Our best fruit land is newly cleared bush land, the maiden soil and ashes made in burning off the timber giving the trees a splendid start. I have measured Plum or Apricot shoots 7 or 8 feet long. Three years ago I went into the bush and picked out a block of land. The Government sent a surveyor, who charged me £5 for surveying 100 acres. Then I had to pay about 1s. 6d. an acre for fourteen years, when the land becomes my own, or I secure my title at any time by paying up the £1 an acre. But to turn it into a flourishing orchard there is something to be done, as now it is covered with huge trees and thick scrub. The trees are magnificent timber, as good as English Oak ; but no matter, I only hope it will burn well. One tree I measured 12 feet in diameter and about 300 feet high. Tree Ferns, too, which would astonish your gardeners ; but the axe flies round to the tune of £2 10s. an acre, and down everything goes into an immense layer of at least 500 tons an acre. The hot summer sun now wilts and dries it, until, when ready, the fire stick is put in, and away goes the destroying, and to me, the clearing element. Now the land when turned up will grow anything—Potatoes as big as one's boots—Turnips, Cabbages, &c. The small stumps and roots are grubbed out, but the big fellows shall have Grape Vines planted around them, and they will not affect the fruit trees between them. But it will cost me £15 to £20 an acre before I get my trees well planted. Still, if my Potatoes, &c., turn out right, a great part of this will be returned in the first two years. My neighbour has four acres of Apple trees six years old and just coming into bearing, and a few weeks ago he refused £1000 for the orchard, coolly asking £2000. Our chief want is more rain, frost hurts us but very little. Your grand hothouse plants grow out of doors better than in the house. Will try to send you some samples of our fruits in a few weeks.—TOMAHAWK.

SUCCESSFUL BOUVARDIA CULTURE.

LAST autumn I had an opportunity of paying a short visit to Mr. Roberts at Gunnersbury Park, and Mr. Hudson at Gunnersbury House ; and at both of the well managed gardens connected with these establishments a grand lot of Bouvardias were in full flower. On the whole they were the best lot of plants of this popular flower I have yet seen. Both the collections were totally dissimilar in character, Mr. Roberts' being a good instance of what can be done in one season, while the greater portion of Mr. Hudson's plants were large specimens two or more years old. Being a great admirer of Bouvardias, and well acquainted with their value in any place where superior cut flowers are required in quantity, I naturally asked for and obtained full particulars of the treatment given, and also permission to publish the same.

We will take each separately, and commence with the young plants as grown at Gunnersbury Park. Cuttings of young growth are taken not later than March, and these are struck in a close frame with brisk bottom heat. When well rooted all are topped, and when breaking afresh are potted singly into 2½-inch pots, and before they are much root-bound are shifted into 5-inch pots and still kept growing in gentle heat. Before the young shoots are far advanced they are carefully pegged down, this causing the plants to push up strong sucker-like growths from the buried stems. A final shift into 7-inch and 8-inch pots was next given, and during the hottest part of the summer all were set out in full sunshine. The compost used consisted of equal parts of turfy loam, leaf soil, and Wood's fertilising moss, and this evidently exactly suits the Bouvardia. Being housed before cold wet weather sets in they do not experience a check in any way, and commence flowering immediately. It is the fine branching central growths, and which vary from 2 feet to 4 feet in height, that give such excellent results. In addition to one grand terminal truss they produce side flowering branches throughout their length, a long succession of bloom being obtained during the winter. Fully 300 plants are thus freely grown, and these, arranged in a bank 33 feet by 8 feet, present an effect more easily imagined than described. They are given an intermediate temperature, and ought to be set not far from the glass. The very useful double white Alfred

Neuner and the pink President Garfield grow strongly and are quite as free flowering as the single varieties. In addition to these Mr. Roberts also grows large quantities of Dazzler, bright crimson ; and Vreelandi, white ; these being among the best single flowering varieties in cultivation.

Many of Mr. Hudson's plants were fully 2 feet through, well balanced, and crowded with flowers. They were growing in a heated pit, some in pots, others, if I remember rightly, planted out in a peaty compost. All would continue to be serviceable till mid-winter, after which time they would be partially dried off or rested, then cut back, those requiring it being potted, and all started in an early vinery. Those kept in pots are partially shaken out and repotted as soon as they break afresh, and all are duly stopped, this being necessary both to induce the formation of abundance of shoots, and also to prevent early flowering. Numbers of cuttings are struck each season, these being destined to take the place of the old ones when these fail. Early in June, and after the plants have been slightly hardened off, all are planted out in the open ground, where without much further trouble they form fairly strong healthy growth, which never fails to flower satisfactorily. They are potted up during the third week in September, and placed in gentle heat, where they soon recover from the temporary check given. The favourite single varieties are Humboldti, corymbiflora, Dazzler, Hogarth, and Vreelandi.

I ought, perhaps, to add that the soil at Gunnersbury House is of a light open character, which just suits the Bouvardia. Where the soil is of a heavy or clayey nature it is advisable to either plant the Bouvardia in cold pits in succession to Violets or forced vegetables, or to prepare an open site specially for them.—W. I. M.

VIOLETS.

These, I am afraid, are very often neglected. Like the ever-popular Lily of the Valley, when once planted in some out-of-the-way corner, there they are allowed to remain, and the flowers the poor plants are able to produce under such circumstances are gathered as a matter of course, and nothing better is looked for. But with the Violet as with many other plants, good cultivation is in no respect thrown away. They flower more profusely ; the individual blooms are larger, the colour is better, and their season of longer continuance. Indeed the way to insure a small crop of poor-looking buds is insured by leaving them severely alone for three or four years.

If anyone who favours these lines with a glance should have a close turf of Violets which, notwithstanding the neglect they experience, never fail to produce their annual tribute. Supposing such a person, out of gratitude for the flowers yielded with such scant attention, should for once give the plants at least as much attention and as good treatment as that bestowed upon his Cabbage bed or his clump of gaudy Calceolarias, that surely would be no great return for the pleasure which this unassuming flower meekly offers year by year. But they do not even require so much as that. In our poorest soil they do well for two seasons, and in very strong soils I should imagine they would succeed even better. In any case, surely a biennial renewal of the plants, manuring and digging the ground, is not a very great tax on anyone's labour and means. The present time is very suitable for starting fresh plants. By examining the old rows and selecting the rooted runners a good number of young plants is secured. As our plants are grown year after year on the same ground—that is to say, in lines under the shelter of walls, we remove all the old plants and select the young ones at the same time. In digging, a good thickness of manure should be added, and if some of the exhausted soil is removed and fresh material supplied from the ground alongside, that will prove of much benefit. As the digging is proceeded with so is the planting. If the soil be dry water thoroughly, and in any case make the soil firm to the roots. A distance of 10 to 12 inches between the plants suits very well, and if they grow as they ought to do they will be close together by November, and at that time also will be producing flowers, continuing to do so for the following five months, weather permitting of course.

The old common variety pleases me best of all. It is the sweetest, deepest in shade—violet, in fact—and in the spring days is smothered with flowers. Unfortunately for its popularity the flowers are small. Some of the large sorts are too tender for our climate. The foliage goes with the first moderately severe frost, and the large flowers do not appear in any appreciable quantity until late in spring. Of the merits of the new Wellsiana I cannot speak from experience, but next to the common small odorata I like for other people's use the variety called The Czar. It stands the winters very well, and is always ready with flowers to open so long as frost keeps away. Double varieties do fairly well if allowed a very warm position at the foot of a south wall. A little dry bracken to turn over the plants during severe frosts is of great utility in saving the buds. The best double is Marie Louise, a fine blue and the freest to open ; and a fairly good companion with white flowers is Comte Brazza. We treat these somewhat differently from the singles, as the rooted offsets are taken off and established in frames, and then transplanted in April out of doors, either to the position they are to occupy when flowering or in some other warm spot. These do well with plenty of water, and appreciate good holding soil.—B.

CROPS THAT PAY.

MINT AND HORSERADISH.

Mint is in demand for at least eight months out of the twelve, in a green state, and none of the crop need be wasted, for it can be dried and easily disposed of in that condition. Few outside those who grow it for the market would regard it as very remunerative, yet few crops are capable of showing better returns. Early in the season—say during January—2s. a bunch can be had for it, 1s. 6d. during February, and it seldom falls below 1s. a bunch until it can be gathered outside. The markets, of course, fluctuate according to the supply, and the bunches increase in size as the season advances. The cultivation of this crop for the market, especially early in the season, is much better suited to the farmer than the market gardener. Whatever may be urged in favour of heat from hot-water pipes, and for our earliest supplies they are indispensable, but a little later in the season Mint is forced better on hot-beds. It is far less liable to be attacked by aphides than when forced under glass.

If plenty of decayed manure is mixed with the fresh litter the bed will be found to retain a steady heat for a long time, and this process does not do the manure so much harm as many think. A steady heat only is needed, not a violent one, and this can be readily regulated by the free admixture of plenty of decaying manure. If a bed is made 18 inches high and covered with a frame—one made of rough boards will do very well—all really needed are lights to fit close over the frame. On the surface of the manure a little ordinary garden soil may be spread, and on this the roots of Mint are packed closely together. These just covered with soil of the same nature, no attention is needed until they have commenced growth, air is then needed to prevent the shoots drawing weakly. When ready for use it should not be cut too low, then a valuable second crop from the roots will result. If the manure is not wanted after the second crop has been removed, a good watering will often start them vigorously again, and valuable roots for stock purposes are the result.

On some soils Mint will last for years and grow vigorously, but light soils must be heavily manured if it is to pay well. It should not remain on light soils more than two years, as if left too long on such soils, or planted in the same place year after year, it is liable to be attacked with a red fungoid growth which quickly spreads over the whole flat and arrests growth. I have lost the whole of my stock from the causes pointed out. It is a good plan to change the stock occasionally by obtaining fresh roots, or by striking the first growths early in the season. The last method necessitates handlights in which to root the cuttings. They strike freely, and in a season make some good roots. The quickest method of propagation is by cutting up the roots, and planting can be done at any time preceding growth—the earlier the better. The ground being manured and dug, shallow but rather wide drills 1 foot apart can be drawn out, and the portions of roots scattered evenly in them, and the soil drawn over them with a rake. A little weeding may be needed when they first appear, but they quickly spread and take possession of the ground. When large quantities are planted, the best of all methods is to plant on beds 4 feet wide, with alleys between them 15 inches wide. In this case the roots for planting can be laid on the surface of the beds, after making them even, and then covered with the soil.

Horseradish.—In some seasons Horseradish proves a very remunerative market crop. This season it has not generally done well, but those who have had it good have found a ready sale at a good price. Very rarely it realises less than 1s. a bundle of twelve sticks, and often 4d. and 6d. more for very fine samples. It does not entail a large amount of labour in production, but if a loose system of management is practised it tells enormously against the succeeding crop. Horseradish, like Rhubarb, will grow anywhere, but not that which finds a ready sale at a paying price. It requires well-worked soil heavily manured. The finest roots are produced by planting the sets vertically, but this method for the market will not pay, simply because the base of the set is 6 inches in the ground to commence with, and the roots descend into fertile ground to too great a depth. By this mode of planting they take too much lifting, and the land too much cleaning afterwards, for it is im-

possible to clear the ground of them—every bit will grow. The sets should not exceed 6 inches in length, and are best planted nearly horizontally. The end intended to form a crown should be a little higher than that from which roots are to form. Plant them on beds raised by placing the soil from the alleys on the top of them before planting is done. When planted on the surface of such beds, with the sets sufficiently deep only to keep them beneath the soil, lifting is rendered easy. If the soil was well broken up prior to planting they can be drawn out without breaking the fangs if loosened with a fork. This insures the ground being fairly free of them, which is very important, or double if not treble the labour that should be required will have to be spent on the crop that follows.

At lifting time the fangs are cut off to form sets for the following season, and these can be stored in a convenient position for preparation during bad weather. The marketable roots also undergo preparation, but the method adopted varies for different markets and by different growers. Some buyers purchase their stock and store it in cellars, and in this case it is best with the removal of any fibry roots that may have formed during the season, but tied in bundles in other respects as lifted. In this way it keeps best by those who have no soil in which to store it. In other cases it is washed and given the appearance of white Carrots by scouring it with sand. When this has to be done, however, rather stiff cocoanut scrubbing brushes are the best for the work. But my advice to intending growers is, Go to the market you intend to supply, and you will soon discern which method of preparation after lifting takes best. If they are sold without cleaning, try a few cleaned ones, and if they do not take so well discontinue the system.

The preparation of the sets before planting is important. The thicker the sets for planting the better will be the roots at lifting time. Very small sets do not attain sufficient size and strength in one season, and to have them tender they should not be of more than two years' growth—that is, one season's growth after planting. When the sets are cut into lengths, rub every fibre off with the exception of a quarter of an inch at the base. This must be carefully done to insure clean roots at lifting time. If allowed to root from any other position than the base of the set, the appearance is spoiled and the sticks are decreased in size. Very often two and three crowns will start, and these, like Seakale, should be removed and the strongest only left. Good Horseradish should be tender and resemble a white Carrot when cut in two.—MARKETER.

MY GLADIOLI IN 1887.

I MAY lay claim to being now the oldest amateur grower of this lovely autumn flower in the kingdom, an honour which I do not suppose many will envy me. For upwards of thirty years, at any rate, I have grown Gladioli. I have seen very great advancement in the flower in every respect. I have had my "ups and downs" in its culture, have passed through disastrous seasons which have made me also bankrupt in stock. I have also seen favourable seasons, but I never remember so favourable a season as that the doings of which, as far as my own garden is concerned, I now chronicle, and in looking back I have a black mark fixed against 1879; and taking all these things into account, it is clear to me that a dry season is the most suitable for it, just as it is for the Potato, and that for the same reason in both cases, that a dry season is not favourable for the development of the disease to which they are subject.

I write the word "disease" with some degree of satisfaction, because I think that the past season has satisfactorily settled the question as to the cause of losses which all growers of the Gladiolus have to mourn over. Two theories have been put forward to account for these losses besides that which attributes them to disease—exhaustion and degeneration. Now with regard to the former, Mr. Kelway, who is the largest grower in the kingdom, and who has always maintained this theory, writes to me, "Seasons govern results." I do not ask him whether he has given up his theory, but it is quite clear that if exhaustion is the cause of failure it must go on, no matter what the character of the season may be. As to degeneration, I cannot think that this theory will hold water in the face of the simple fact that I have had this year plants 5 and 6 feet in height from corms which have been four or five years old (I use this term popularly, although it is well known that the corm dies each year and a new one is formed above the old one); and to another fact, that varieties which came out twenty years ago can be had as good as they were when first brought out. Since the above was written I have examined some corms from France, direct from Fontainebleau, and some of them are as badly diseased as any I have ever seen.

One result of this past season will be, that wherever any cultivator has adopted some particular mode of culture he will attribute his success to that special culture, and ignore the effect of the season. Thus I see that one grower is so satisfied with the plan of starting them in pots that he intends to continue the practice, believing his success to be attributed to this, when probably it is owing to the character of the season. I have, amongst my many experiments with them, tried this more than once, but I never found any better results from it, and where the collection is large it entails a great deal of trouble.

I have been impressed with the notion during these last two or three years that it is a mistake to suppose that the Gladiolus likes a light soil, but that, on the contrary, a stiffer one suits it better, and that where the soil is calcareous they thrive best. Mr. Burrell of Cambridge holds this opinion very strongly, and last season confirmed my view. I had some planted in a part of my garden where the soil is stiffer and more calcareous, and some where the soil is lighter and full of decayed vegetable matter, and those in the former seem far ahead of the latter. I asked the question of Messrs. Souillard & Brunelet of Fontainebleau, my dear old friend Souchet's successors, and they inform me that the soil at Montereux where the greater portion of their culture is carried on, and which is also one of the most famous places for the Chasselas de Fontainbleau, is calcareous—that at Fontainbleau is sandy. They do not, any more than most of the tribe, like a "stodgy" tenacious soil, but they do like one that is tenacious and yet allows water to run off. I allowed last year my roots a large space between them, 12 inches, but on paying a visit to Mr. Campbell of Gourock, N.B., I was surprised to find how very much closer his were planted, and as he is one of our most successful growers and exhibitors I have determined to plant closer this year, say 6 or 8 inches. I largely adopted the plan, last year, of cutting the corms in two, and indeed in some cases in three, and although there exists in some people's minds a prejudice against this plan, I can testify that some of the best blooms and corms were produced from such cut corms, and at the same time it doubles the grower's stock.

From letters I have had from Mons. Souillard this season I imagine that they have felt at Fontainbleau some of the same difficulties which we experienced in England this season. Only the other day he wrote to me to say that frost and snow were still with them, and that consequently planting was out of the question. Last year I planted mine at about the usual time—about the first week in March, but this year it will be quite if not more than a month later before the work is completed. I do not, however, think that that makes so much difference as might be supposed. In harvesting them last season I departed from my usual habit of taking them up in October, being moved thereto by Mr. Burrell of Cambridge, and delayed taking them up until late into November and early in December. This gives the corms a longer time to ripen, but at the same time it is somewhat more troublesome, as by that time the beds are tolerably saturated, and consequently more soil clings to the roots than when they are "lifted" in an earlier and drier time.

I had not so much opportunity of testing the new varieties sent out by the Fontainbleau firm last year as usual, and, unfortunately, circumstances prevented me from seeing the exhibitions at the Crystal Palace or at the Aquarium, where Mr. Burrell and Mr. Campbell of Gourock showed so well, but am not sure whether they exhibited any of the novelties of 1886 or not. The following are descriptions of those of 1886.

FRA DIAVOLO.—This has a long and compact spike of large flowers of a lovely orange-red colour, flamed with reddish violet on the edges of the petals, and with a large pale yellow spot in the centre.

ENCHANTERESSE.—This I believe to be the best of the year. It is a large and compact spike of very large flowers, white with pale satiny lilac marking, violet-red stripe in two of the divisons, very tall.

MAGICIEN.—Plant of medium height, compact spike of large flowers, the edges of the petal slightly fringed; centre of flower passing into a pale rose.

MAGNIFICUS.—Tall plant, superb spike of very large flowers, round and open, cinnabar red, beautiful white spot in centre with violet border.

MINOS.—Tall plant, long spike with closely arranged flowers of salmon-rose, largely flamed, and variegated with cerise red, amaranth band and centre.

POLLUX.—Dwarf plant of rounded flowers, lovely carmine red, with brownish red stripe on border of the petals; beautiful white spot.

SIRIUS.—Long spike with flowers of a lovely rose, striped with carmine, with purple spot.

SPLENDENS.—Long spike well furnished with flowers of cinnabar red, with pale yellow spot on one or more of the divisions.

There is one great advantage which the Gladiolus possesses—the length of time during which it produces flowers, owing to the fact that there are four distinct periods at which certain varieties produce their blooms, some, as Shakespeare, producing theirs on or about July 26th, and others, like Phœbus, not blooming until quite late in October, and while this somewhat detracts from the appearance of the beds, as some are going out of bloom while others are coming on, yet the pleasure the flower gives to the grower is greatly added to by this fact, fresh beauties are daily expanding, and thus the interest is kept up. In drawing up the following list I have necessarily been guided by my own experience, and it is possible it may not agree with that of many growers, but as far as this locality is concerned it is correct. The four periods are from July 26th to August 10th; August 10th to 24th; the third from August 24th to September 10th; and the fourth from September 10th to the end of October. Let me take them in order.

1.

Ali, a curious flower, long spike, but imperfect shape, well arranged, pale rose, and heavy white striped with red.

Amalthée.—Large flower, white ground, with violet stripes somewhat thin in texture.

Archduchesse Marie Christine.—Large, white ground, deeply flaked with rose.

Belladonna.—White tinted with lilac, lower divisions lightly marked with carmine.

Carnation.—A very pretty flaked flower, good spike.

Demosthéne.—Beautiful bright rose, very large, perfectly formed flowers.

Horace Vernet.—Brilliant purplish red, good spike. Klusson marks this as a late variety; with me it is one of the earliest.

Mabel.—One of the most perfect flowers that we have; compact spike, ground colour white striped with bright carmine on the edge.

Madelèine.—Very early flower, dwarf habit.

Opale.—Large spike of good flowers, very delicate rose. I have never succeeded in growing it quite to my satisfaction.

Pactole.—Pretty yellow flowers, but somewhat uncertain.

Shakespeare.—Very early and good, but sometimes blooms may be had of it later. I generally look for it about July 26th.

Victor Jacqueminot.—Salmon orange richly veined with scarlet; a bright flower.

2.

André Leroy.—Dark purplish red with white line on the petals.

Baroness Burdett Coutts.—Lilac tinged with rose and purple; large and fine flower, but not stout enough.

Bicolore.—Very distinct; top petals bright salmon; lower divisions white edged with rose.

Camille.—Pale magenta lilac, flushed deeper colour; fine flower.

Colbert.—Deep cherry red petals with white lines.

Crépuscule.—Creamy white, tinted lilac, large and fine spike.

Dalila.—A very lovely flower, bright rose with white lines and spot; very fine.

Dr. Fontan.—Pale rose, richly flamed with red, compact spike.

Flamboyant.—Bright crimson scarlet, very large, bright and dazzling in colour.

Hespéride.—Dark salmon striped, with a somewhat loose and flabby flower.

Léandre.—Bright lilac with large white blotch; a large flower of great solidity.

Mascarelle.—A new flower of a very curious colouring, salmon rose; lower divisions yellow edged with rose; distinct.

L'Unique Violet.—Dark lilac shaded violet; large and good.

Néréide.—A very fine flower; compact spike, pale lilac rose, good spike.

Oriflamme.—Large straight spike, compact large flowers, orange rose, a little paler in the centre, the lower divisions lightly marked with gold yellow and lined with carmine.

Ovide.—Purplish crimson, blotched and striped with white; a fine and striking flower.

Ondine.—A very fine white flower.

Pasquin.—Bright crimson scarlet, edge of petals suffused with slate colour; shape not good, too square.

Pygmalion.—Cherry red, blotched and striped with white.

Tamerlane.—Very dark slatey red, blotched and striped with cream; requires shading, as it is apt to burn.

Tour du Monde.—Dark cherry, shaded lilac, white blotches.

3.

Africaine.—Slatey brown, flushed scarlet, white blotches, fine spike; a remarkable flower.

Aurore.—Clear orange, blotched and striped white.

Atlas.—Pale porcelain, slightly tinted and striped violet; fine flower and spike.

Caméléon.—Lilac, striped white, pale orange blotch; fine and compact spike.

Caprice.—Pale ground, flushed purple.

Cervantes.—Bright rose, tinted crimson, white lines, orange tinted lower petals.

Chloris.—White mottled, flushed carmine.

Colorado.—Bright orange, shaded red, good shape, and very bright.

Gallia.—Fine flower and good spike.

Grand Rouge.—Very like Meyerbeer, but larger, and blooms earlier.

Jeanette.—Rose striped and flushed with carmine.

Jupiter.—Red flaked and spotted with dark maroon.

Lacépède.—Lilac rose, large, good flower.

Madame Desportes.—A fine old flower; pure white, but not good in constitution.

M. Adolphe Brongniart.—Another old but very fine flower; flamed red on white ground.

Mount Etna.—Velvety scarlet, blotched white; a very fine flower.

Murillo.—Cherry rose, somewhat undersized, but a very pretty flower.

Neige et Feu.—Good spike of medium sized flowers, bright cerise, with large white blotch.

Rayon d'Or.—Yellow with red stripes.

Thérèse de Vilmorin.—A new and novel flower, creamy white; good and compact spike.

4.

Benvenuto.—Light orange red, white blotch.

Grand Lilas.—Very large, fine flowers, beautiful shade of lilac.

Le Vésuve.—Brilliant scarlet red; a fine flower of good substance.

Matador.—Bright cherry red, striped and blotched darker colour; very fine.

Médicis.—Long spike of large flowers.

Phœbus.—A very brilliant flower, fiery red; the latest flower we have; very seldom exhibited.—D., *Deal.*

PEACH BUDS FALLING.

It is most perplexing to a cultivator when the Peach buds are falling and nothing can be done to prevent them. We have never had much cause to complain in this way, but always inclined to believe that the state of the roots, or a portion of them, has something to do with the evil indicated, and it may be that one tree will suffer while its fellow escapes. We freely admit that fire heat supplied unduly, sudden changes from warm to cold, injudicious watering, and a host of other causes may be instrumental in strewing peacheries with strong and healthy looking blossoms. The few cases of which we have had experience were from some of the leading roots, only a few, getting through the drainage into inert sandy soil, and with these trees we had to give battle sharply to keep red spider at bay. We never had any mishap with early forced Peaches, say those which set in January, and this year after thinning all the flower buds to about an inch apart the set has been superabundant. We believe in keeping the shoots thin, and no more on the tree than are necessary—viz., one at the point of the fruit-bearing wood to draw up sap, and one at the base of the shoot to supply fruiting wood for next year. Moreover, it is always our practice to thin all wood buds not wanted as soon as they can be discerned, which is some time before the fruit buds open; the latter are thinned along with the immature wood buds. We maintain that by clearing off all these before they develope into growth the tree receives no check. This experiment we tried first when a lad, and have rigidly put into practice ever since.

Reverting to root-action, we may describe a case where bud-falling was considerable. The first season we were baffled. The roots, which filled the fine border to the surface, had every care, every necessity with top-dressing and moisture supplied, but half the buds fell notwithstanding. The following season matters were not improved. The foundation of the border inside was examined, and there a few strong roots were found that had gone through the drainage, which had been manipulated with much pains by a clever predecessor, and deep down among poor irony sand they had spread far and wide. They were immediately under the trunk of the tree, and it was useless to trace them with the view of saving them. They were cut clean off, and under the tree lime rubbish with stones was rammed. This was an effectual remedy, the trees doing far better without the strong roots than with them. Vines close by, very subject to red spider, were suffering from the same cause, and no watering could aid the roots.—M. T. C. H.



SOME USEFUL ORCHIDS AND THEIR TREATMENT.

The following Orchids can be grown and flowered continually in one house where miscellaneous Ferns and flowering plants are always grown under the ordinary stove treatment.

Calanthes.—These are foremost among Orchids in producing the largest amount of flowers during months of greatest scarcity. C. Veitchi and C. vestita are best grown in baskets suspended from the roof over the paths. The growths become more sturdy and matured in this way than in pots, and consequently the flower spikes much stronger. I have had flower spikes of C. Veitchi 6 feet long and with upwards of forty blooms, and when arranged white and red alternately they have a very pleasing effect. The best compost to grow them in consists of three parts fibry loam and one each of Orchid peat, sphagnum moss, dry cow manure and silver sand, with two of charcoal. The best kind of loam is from poor commons or hill sides, as the fibre, which is the only part needed, is more durable, and contains less soil than turf from cultivated pastures. The best cow manure is what has been used for mulching Vine borders in summer, which becomes thoroughly sweetened and friable. It should be removed in the autumn in a perfectly dry state, and kept so until required for use. Calanthes are benefited by liquid manure made from deer or sheep droppings, and it should be frequently given them when the roots are fully in action, and continued as long as the foliage remains green and healthy. As soon as the flower spikes are visible water must be gradually withheld, and this is of great importance, as the flower spikes will be weakened no matter how strong the pseudo-bulbs may be, if water is too suddenly withheld.

The evergreen species, C. Masuca and C. veratrifolia, require different treatment from those already named, which should be grown exclusively in loam, the same as that recommended for the deciduous Calanthes, only with this difference, the only part of it to be rejected is that which separates from the fibre when the turves are broken up. It should be in large pieces, mixed with lumps of charcoal, the pots being half filled with large hollow crocks, and the plants kept well above the pot and firmly packed with the well mixed turf and charcoal, but not rammed. The turf should be procured in sufficient time to have it mellowed before it is used, and the thickness of turf must be regulated by the depth of fibre. The plants, after potting, should have a good supply of water, which will be all they will require until the roots become active, when constant waterings are necessary, as they grow and flower all the year through, and if liquid manure be given them at the same time as recommended for the deciduous varieties, the substance and colour of leaf will be greatly improved, and a good winter supply of flowers insured. C. Masuca is rarely out of flower with me, but I have not had the same experience with C. veratrifolia, as the plant I have of the latter is from a small imported piece I have had a few years, and though it only occupies an 8-inch pot, it has just thrown up six strong flower spikes.

Cypripediums.—C. Dominianum is a great acquisition, and one of the most truly perpetual flowering plants I know. I have sometimes had six blooms on one stem. C. caudatum, which is one of the parents of C. Dominianum, resembles its progeny very closely in flower, but not in freedom of growth. C. barbatum grows freely and flowers profusely every spring, and solitary blooms in autumn, often two blooms, on a stem. I grow them exclusively in sphagnum moss and sand in pots filled within an inch or so of the top, crocks and charcoal, on which the plants should be raised above the rim of the pots with moss, and each growth packed around firmly with the same material, renewing it when needed, as they do not require periodical shiftings. The roots are fond of fastening on the rim of the pot, from which they do not like being removed.

Cœlogyne cristata.—This both grows and flowers freely if kept near the glass. Peat in well drained pots suits it best.

Dendrobium.—D. chrysanthum and D. fimbriatum if kept quite near the glass flower splendidly, producing blooms several years in succession from the same pseudo-bulbs grown in peat either in baskets or well-drained pots. Spring is the flowering period of both, though the former sometimes flower more than once a year.

Peristeria elata.—This is thought by some gardeners to be a shy plant, but it flowers with me every year. The large pseudo-bulbs, which are the size of small cocoanuts, produce flower spikes 6 feet long, and after the flowers commence to open they continue flowering up the spike for six weeks. Its peculiar spicy odour is more pleasing at a distance from the flowers than near to them. The best compost to grow them in is tough fibry peat and charcoal, the pots being three parts filled with large hollow crocks and filled nearly to the top with large lump of peat and charcoal, giving the plant as much elevation as possible, packing more large lumps of peat and charcoal around them, leaving the surface as open and porous as possible. After the potting is finished the whole surface should have a thick layer of sharp sand spread over it and well watered with a fine-rose pot, and no more water will be required for some time. The proper time for repotting, which should be done every year, is when the young pseudo-bulbs begin to emit roots, the plants being pulled out of the pots and the old soil shaken from them, the dead roots being cut off. Sponge the foliage and allow it to remain on the old pseudo-bulbs until they turn yellow, as all the time they remain green they are assisting the old pseudo-bulbs in the production of those which are to follow them. If too many old pseudo-bulbs should have accumulated for the size of the plant, only such as are shrivelled should be pulled off.

Phalænopsis.—P. amabilis and P. grandiflora grow and flower well, but the flowers of both are readily damaged in a humid atmosphere. P. Schilleriana is a great acquisition; it is superior in constitution to the former, the flowers are not so sensitive to damp, and are unrivalled in elegance both in form and colour. Wooden blocks or baskets seem the best to grow them.

Saccolabium.—S. guttatum and its varieties grow and flower splendidly. I have pots made purposely for them, having as many apertures for ventilation cut in them as the pots will bear. When the plant roots are aranged around the pots it should be carefully filled to the top with clean hollow crocks, which may be covered with a thin layer of sphagnum moss, more for the sake of appearance than utility.

Vanda tricolor, if grown in the same way recommended for Saccolabium, will have that desirable fine dark thick glossy growth which is too often painfully absent with Vandas, though most necessary in order to have them bloom twice a year as mine do.

Zygopetalum Mackayi is a useful and constant flowering Orchid, and at a season when much desired, best grown in pots well drained, using heavy plant peat and sharp sand and charcoal.

Doubtless there are other species that may be named, but none that I have tried can be so successfully grown in one house as those enumerated.—Rd. Westcott, *Raby Gardens*.

FREESIAS.

The other day I saw some capital Freesias in the garden of the Misses Goodlad, Hill Place, Bishop's Waltham. There were nearly fifty pots of plants in different stages of growth, some coming into bloom, some in full flower, while others were past. The results clearly proved that for either conservatory or house decoration, where delicacy of colour and sweet perfume are valued, Freesias are most useful. Mr. Blake informs me that he prefers Freesia Leichtlini, in some respects, to F. refracta alba. The latter variety does not develope its flowers nearly so well, remaining more cup-shaped than F. Leitchtlini, consequently the beauty of the flowers is not so easily seen. The latter also produces stronger spikes and individual flowers. Some of the bulbs he has had five years, and they are finer now than ever. They flower much better the second year after purchasing them. He grows about eight bulbs in a 5-inch pot. The flower spikes grow from 10 to 15 inches high, and produce twelve blooms on the strongest spikes. When flowering is past, which takes place in the conservatory, the plants are removed to a cooler house, gradually withholding water until the bulbs are ripened, when they are stood outside close together on a bed of ashes until the bulbs are repotted in the early part of September. The soil used is good loam and sand. They are then placed in a frame, where water will not be required if the soil was moist. When growth has fairly started they are removed to a cool vinery, securing a light airy position near to the glass. Water is most carefully supplied to the roots. In February they are placed in a vinery where the night temperature is kept at about 55°, and as the flower spikes develope the plants are removed to drier quarters, where the flowers last much longer.—E. Molyneux.

CONSERVING HEAT.

This winter has been a very trying one, and to keep up the requisite temperature in a Cucumber house has been quite enough to worry the most equable. Last summer I purchased a slow combustion boiler, and I have found it answer admirably, for the heat has been on the average from 62° to 72° at six o'clock next morning after stoking at nine o'clock at night, and frequently the fire has not been out. I do not think in any case the heat has been lower than 62°, and in only two

or three cases has the fire gone out without burning, and I attribute the failure then to having let the body of fire get too low before stoking. My house is a sunken one, and the top lights not fitting closely I found the night temperature fall greatly when the wind was cold and strong, and to obviate this I hit upon a plan which may perhaps be very common, but which I have not seen elsewhere, and it proved very successful. I joined one end of an archangel mat to another, and they were thus long enough to go right over the house, and having heavily weighted with iron bars the ends on each side of the house they were kept securely in their places however high the wind might be. Four pairs of mats covered the house, were easily removeable, and considerably added to the temperature at little expense.—H. S. EASTY.

Notes & Gleanings

EVENTS OF THE WEEK.—The principal horticultural gatherings of the week will be the Ghent Quinquennial Show, which opens on Sunday next, the 15th inst., and continues open for eight days. It will no doubt attract many British horticulturists, either as exhibitors, members of the Jury, or visitors. On Wednesday, the 18th inst., the Royal Botanic Society will hold their second spring Exhibition in the Botanic Gardens, Regent's Park: and the Newcastle-on-Tyne Horticultural Society will hold their spring Show on the same day.

—— THE GHENT EXHIBITION.—We have received the following note from Mr. Henry Pearson:—"The continental Manager of the L. C. and D. Railway writes me that through tickets will be issued for Ghent Show from London, viâ Dover, Ostend, Ghent, Brussels, and Rotterdam to Haarlem, returning viâ Flushing, Queenborough, to London, at £3 18s. first class, and £2 15s. second class. He sends no rates for return tickets to Ghent." It may be added that travellers, to whom a day in London is an object, can leave Liverpool Street Station, G.E.R., at 8 P.M., arriving at Antwerp the next morning, from which Ghent is about an hour distant by rail. Return tickets between London and Antwerp are—First class £2, and second class £1 4s.; single fare £1 6s. and 15s. respectively. We are informed by a Dutch bulb-grower that the Hyacinths are not in flower in Holland, being unusually late this year.

—— THE WEATHER.—"B. D." writes from Perthshire—"April 2nd to 9th has been a week of beautiful weather. There has been frost every night from 1° to 9° last night, 8th. The days have been bright and sunshiny, and garden and farm work has been pushed forward." The weather in the south remains very cold, with slight frosts and light occasional showers. There has been no material interruption to work, but vegetation appears at a standstill.

—— LARGE CINERARIAS.—We said on page 258 if any growers of blooms 3 inches or upwards in diameter, with florets three-quarters of an inch across and overlapping, they would merit and receive recognition. Mr. H. Cannell sends us examples of what he calls his "minia tures." Some of these equal the dimensions above named, one bloom being 3½ inches across, and the florets of another exceed three-quarters of an inch in diameter. The colours are varied and rich. We observed in Mr. Rivers' greenhouse at Sawbridgeworth last week a plant with blooms 3½ inches in diameter and the florets seven-eighths of an inch across. Mr. Rivers does not sell seed.

—— MR. W. BULLIVANT, Homewood, Eden Park, Beckenham, writes:—"I notice Messrs. Sutton & Sons sent you a bloom of CINERARIA, grown by my gardener, Mr. J. Creswell, and which you were good enough to notice in your Journal. It may be interesting to you and your readers to know that this Cineraria was grown in a 6-inch pot, and that there have been fifty-eight flowers on it, many—I should say a dozen—equal to the one you had, and I think some of more perfect colour, and none under 2½ inches across. I have the plant still in my greenhouse, but some of the flowers are not now at their best, and one spray, I am sorry to say, has been broken. I have at present grown by the same gardener a Dendrobium densiflorum in full flower, with six racemes, that I am told by two well known Orchid growers are by far the finest they have eve seen."

—— "SPERO" writes:—"If any of your readers have tried FLOWER POTS GLAZED ON THE OUTSIDE ONLY, would they give their experience of them? I began by trying pots painted on the outside (two coats of Walter Carson's red paint). I liked the plan so much that I am growing plants largely in glazed ones. The gardener so far likes it, and under my instructions is growing two plants of the same kind in the same sized pots side by side. The plants in glazed pots do not require watering so often, and certainly look the best so far."

—— DESTROYING CRICKETS AND COCKROACHES.—"J. E. M." writes:—"Procure 1 lb. of treacle and a few jelly pots, then mix some of the treacle with water to the thickness of paint, and fill the jelly pots about a third part. Plunge the pots in fibre up to the top, so that the crickets or cockroaches can easily fall in. The pots ought to be placed wherever the crickets abound most, which is always where there is a warm dry heat. The smell of the treacle seems to have a great attraction for them, as in one night I have seen the pots with as many as the mixture would hold; and when they once get in there is not the slightest fear of their coming out."

—— THE CHISWICK GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION concluded their winter session on the 4th inst. by a supper and entertainment at the Bolton Hotel, Chiswick, when about thirty members and visitors were present. The officials of the Association, Mr. J. Fraser, Mr. Sidney Summers, and Mr. J. Barry (Secretary) were present, and referred in appropriate terms to the work of the past season, the character of the papers read, and the interest taken in the general proceedings. Mr. G. Gordon, Mr. Bones, and Mr. Daniels, as proposers or responders to various toasts, also noted that satisfactory progress is being made, though a desire was expressed that members would attend the meetings more regularly as an encouragement to those who contribute papers. Several capital songs were sung by Messrs. Barry, Cook, Cannon, and others, and a very pleasant evening was spent.

—— WAKEFIELD PAXTON SOCIETY.—The Committee of the above Society have unanimously decided to recognise the able services rendered to the Society by Mr. Herbert Chapman, who has acted as one of the Secretaries for a term of six years, by presenting him with a student's microscope. It was also resolved that an appeal be made to the members of the Society for subscriptions to defray the whole of the cost of this testimonial. The microscope will be presented to Mr. Chapman at the annual dinner, to be held shortly. The following is the programme of meetings for the first quarter, session from the present date, some having been held during March, at the Society's Rooms, "Saw Hotel," Westgate, each Saturday evening at eight o'clock:—April 14th, "The Fringe of Life," being an exposition of the lowliest forms of animals and plants, Mr. Henry Crowther, Manchester. April 21st, "Plants Suitable for Entrance Hall and Room Decoration," Mr. T. R. Preston. April 28th, "Garden Literature, Past and Present," Mr. W. K. Woodcock, Sheffield. Sale of Periodicals. May 2nd, "The Auricula," Rev. F. D. Horner, Kirkby Lonsdale. May 5th, "The Daphne," Mr. J. Smith, Leeds. May 12th, "Some Peculiarities of Climbing Plants," Mr. T. Garnett. May 19th, "The Peach and Nectarine," Mr. Atkin, Clayton West. May 26th, "The Tulip," exhibition and discussion. Sale of periodicals. The Hon. Secs. are Messrs. Geo. W. Fallas and T. Garnett.

—— AN interesting experiment in PLANTING WASTE SALINE tracts in India has been carried out by Mr. Maries, Superintendent of the Gardens of the Maharajah of Durbhunga. "The results," says *Nature*, "have been communicated to the Agricultural Department, Bengal, and are contained in the last report of the Director. Mr. Maries says that six years ago, when he went to Durbhunga, he did not know what to do with patches of saline soil, on some of which not even weeds would grow. He dug the soil to a depth of 2 feet, and planted it thickly at the commencement of the rainy season with trees which had been grown in pots till they were about 3 feet high. In three years the ground was filled with roots, and to all appearances the salt had gone. When the trees were thinned out last year, leaving only the best, the ground was found to be in good condition. Similar experiments have been carried out in other places, and now Mr. Maries has splendid Plantains growing on soil which a few years ago would not even grow a weed. He employed various kinds of trees in his reclaiming operations, but he says that the best were the Inga Saman, or Rain Trees, and the Albizzia procera. The former is valuable as producing an enormous quantity of surface-feeding roots, and these decaying yearly leave a rich vegetable deposit on the soil. The trees soon completely change the character of

the soil. The timber is excellent for fuel, and the trees bear lopping well. It is such an enormous water-absorber that it would most probably be very useful in swampy places as a fever preventive, like the Willow, which is planted in China around the villages in the Rice districts."

—— A Weeping Russian Mulberry.—An American paper gives an illustration from a photograph of a specimen seedling Russian Mulberry, raised by J. J. Measer, Reno County, Kansas, and remarks that "The tree, which is growing on its own roots, came up together with a large number of seedlings and attracted attention by its graceful drooping habit, which distinguished it from all others. When one year old it was transplanted and cut off close to the ground, and in its second year it was trained to a single stem. From that time till now—its fourth year—it has received but little care. Its fruit and general character are those of the common Russian Mulberry, and having survived a temperature of 20° to 22° below zero it may safely be termed 'hardy.' It is a rapid grower, bears almost any amount of pruning or cutting back, and makes a desirable lawn tree. To grow the Russian Mulberry in tree form the lower branches have to be cut off, else it will become shrubby, as grasshoppers and other insects feed upon the tips of the young shoots." In the engraving the tree closely resembles a Weeping Ash, the long slender branches drooping to the ground, totally different from the ordinary Mulberry.

—— At the ordinary meeting of the Royal Meterological Society, to be held at 25, Great George Street, Westminster, on Wednesday, the 18th instant, at 7 p.m., the following Papers will be read :—"Jordan's New Pattern Photographic Sunshine Recorder," by James B. Jordan. "On the Meteorology of South-Eastern China in 1886," by William Doberck, Ph.D., F.R.Met.Soc. "Lightning in Snowstorms," by Prof. A. S. Herschel, M.A., F.R.S. "Insolation," by Rupert T. Smith, M.Inst.C.E., F.R.Met.Soc.

—— The following Summary of Meteorological Observations at Hodsock Priory, Worksop, Notts, for March, 1888, have been received from Mr. Joseph Mallender :—Mean temperature of month, 37·7°. Maximum on the 9th, 57·6° ; minimum on the 24th, 25·2°. Maximum in the sun on the 27th, 106·8° ; minimum on the grass on the 24th, 15·1°. Mean temperature of the air at 9 a.m., 37·0°. Mean temperature of the soil 1 foot deep, 37·6°. Nights below 32°, in shade, nineteen ; on grass, twenty-four. Total duration of sunshine in month, 71·5 hours, or 20 per cent. of possible duration ; nine sunless days. Total rainfall, 2·48 inches. Rain fell on eighteen days. Average velocity of wind, 12·7 miles per hour. Velocity exceeded 400 miles on nine days, and fell short of 100 miles on one day. Approximate averages for March :—Mean temperature, 41 8 ; rainfall, 1·61 inch ; sunshine (seven years) 104 hours. A very cold month with a good deal of snow. The mean temperature is lower than any previous year except 1883. Rather more rain than in any year since 1877, and the first month since January, 1887, that the fall has exceeded the average ; less sun than any of the last seven years.

—— The late Mr. John Hollingworth.—"D., *Deal*," sends the following note :—"Amongst those who have succumbed to this terribly severe winter we have now to reckon my very dear and valued old friend, Mr. John Hollingworth, of Turkey Court, Maidstone, the doyen of Rose growers, and one of the most enthusiastic lovers of the flower that I ever knew, and, more than that, one of the tenderest hearted and most generous of men, one whom his native town will terribly miss, for his hand was ever open, and his most liberal gifts to his noble parish church testify to the love that he bore to the church of which he was a member, and the pride which he took in the splendid building which adorns his town. Some years ago I gave a short notice of my visit to his garden, and in it spoke of the two brothers so deeply attached to one another, and so ready in every good work. Since that time age had told upon him, or, as he said in a letter to me some time ago, "Old man has got a strong hold of me,"—and then, at last, somewhat suddenly the end came. How he will be missed by hundreds who were the recipients of his kindness no one knows, for the two brothers were men who, while not suffering a false modesty to withhold their names where it might be of use to do so, yet "did good by stealth." I often wonder whether Charles Dickens had them in his mind when he drew the character of the Cherryble Brothers, but there was much that often reminded me of them in my good friend. In his nephew, Colonel Pitt, who will, I believe, ultimately succeed to Turkey Court, we have, I am glad to say, a thoroughly good rosarian, and one who will, I think, keep up the old traditions of the place."

—— The quarterly meeting of the United Horticultural Benefit and Provident Society was held on Monday evening last, April 9th, at the Caledonian Hotel, Robert Street, Adelphi Terrace, Strand. Mr. E. Berry in the chair. The Committee are glad to say that the number of members still continue to increase, twenty-four new members having been elected during the quarter, making a total of 250 benefit, and thirty honorary members, including two life members. The Committee earnestly hope that many more gardeners and persons connected with horticulture generally will avail themselves of the opportunity of joining this excellent Society. A copy of the rules will be sent to any address for six stamps on application to the Secretary, W. Collins, 5, Martinhoe Terrace, Martindale Road, Balham, S.W.

—— The death has been recently announced of Mr. Augustus Mongredien, which took place on March 30th, at Forest Hill, in his eighty-second year. He was the author of "Free Trade and English Commerce," and "History of the Free Trade Movement in England." He also published a number of works of a more general character, including "The Western Farmer of America," "England's Foreign Policy," and a treatise on "Trees and Shrubs for English Plantations." In 1878 Mr. Mongredien published a work in three volumes, entitled "Frank Allerton : an Autobiography." He established a nursery at Ascot, and an experimental farm at Bratton Clovelly, and engaged at one time rather extensively in the cultivation of the Ailantus, with a view to the promotion of silk production in this country, but was unsuccessful.

AMARYLLISES AT CHELSEA.

The weather this season has been very unfavourable to the development of plants of all kinds under glass, and the flowering period of many has been greatly retarded. This has been the case with the Amaryllises in Messrs. J. Veitch & Sons' nursery, King's Road, Chelsea, which are fully a fortnight later than usual ; but ample compensation for the delay will be derived by visitors during the present and following weeks. These plants invariably form one of the most brilliant of numberless attractions at the famous Chelsea nursery, and the wonderful progress made with them in recent years has been frequently recorded. Every season novelties of exceptional merit and distinct characters have been obtained, and the limits to the range of variation are evidently not yet reached. When taken in hand Amaryllises had small flowers with thin narrow petals and star-like shape, and the first efforts were directed to improving the form and increasing the size of the flowers. This was soon accomplished, and having secured a good foundation to work upon, the colours came in for consideration next with equally satisfactory results. Breaking away from the stereotyped shades, rich tints in crimson, scarlet, and rose have been secured, fading through delicate blush tints to white, and still further diversified by a charming reticulation in scarlet or crimson on a white ground, or relieved by bold bars of white through the centre of the petals. Grand massive flowers are now obtained that produce a magnificent display, the colours being almost dazzling, and the rich green foliage produced with them in many cases is valuable as a foil.

The span-roof house in which the Amaryllises are grown and flowered has been repeatedly described, but it may be mentioned that there is a wide centre bed and two narrow side beds, the former containing 1044 flowering bulbs in pots, and the latter some 2000 younger bulbs, some of which have, however, reached the flowering stage. Over 1500 spikes are borne by the bulbs in the centre, and as these have mostly three to four flowers each there is a total exceeding 4500 of these grand flowers either expanded or rapidly advancing. As Messrs. Veitch and Sons are equally as successful in the culture of these plants as in raising new varieties a few remarks on the system adopted may be useful. The bulbs raised from seed flower in about three years, though when planted out in beds they have been known to flower in nineteen months, but this is quite an exceptional occurrence. They are potted in the middle of January in a compost of good turfy loam, old cow manure, and silver sand, and the pots are plunged in a bed of old tan. The bulbs are a little more than half buried in the soil, pots being employed proportionate in size to that of the bulbs, but care is exercised to avoid employing too large pots. No water is supplied until about the end of February, when the flower spikes or growth are seen to be starting. A temperature of 55° to 60° is then maintained, and a little bottom heat is afforded by pipes under the bed. Growth advances in most cases with the flower spikes ; in some instances, however, the latter develope fully before the foliage, and the flowers last about six weeks, and when they have been removed from the plants the growth is encouraged as much as possible ; a layer of tan is placed over the bulbs, and the roots spread strongly into this both from the base and over the top of the pots. Free ventilation is afforded during the summer and autumn months with a little shade from the hottest sun, and from the middle of August until the end of February no water is supplied to the plants, the bulbs thus

being well ripened, a most important point in the cultivation of Amaryllises. In few gardens can houses be specially devoted to these plants, but they are not essential, as similar treatment can be afforded in other structures, and some are very successful with them in vineries.

All the varieties raised at Chelsea have distinctive merits, and any of those that have been named in the past four or five years are worth a place in the best collections, but the following novelties, nearly all flowering for the first time this year, are remarkable additions to the finest yet obtained, and will find many admirers.

Conqueror.—A superb variety with handsomely formed flowers, broad rounded petals, dark scarlet, with well defined star, the central white bars extending half way up the petals. One of the best.

Rodney.—Flower of good size and excellent shape, the petals nearly all of equal size, rounded scarlet, broad white central bar, and few veins. A very pretty variety.

Finette.—Medium size neat flower, even spreading petals, white, the three upper ones with a few scarlet veins in the centre and near the base, the lower central petal pure white.

Acquisition.—A grand variety, handsomely formed flowers, outer petals 3½ inches across, flowers 8 inches in diameter; petals rounded, bright scarlet, with pure white central bars running to the apex in the outer ones and half way in the inner petals.

Ariel.—Very strong, large flowers, two spikes of four flowers each; light salmon scarlet, with darker veins and white central bar.

Chevalier.—An immense flower; petals 3½ inches across, bright scarlet, pure colour. Very effective, bold variety.

Sims Reeves.—Medium size flower of remarkable colour, extremely rich dark crimson and dark veins, narrow white central bar; two spikes, one with four flowers expanded.

Vivian Grey.—Flower very large, 8½ inches in diameter, broad flat petals, light clear scarlet. Handsome variety.

Hazledon.—An extremely distinct colour, quite a maroon purplish crimson, slight whitish tip; flower of medium size, neat form. A capital novelty.

Phædria.—Very large flower, broad round petals, white ground freely veined with scarlet, white central bars.

Chieftain.—A magnificent variety, flowers 8½ inches across, open, bold, broad petals, excellent shape, rich reddish scarlet.

Franklin.—A grand flower in the style of Vivian Grey, but darker scarlet.

Terentian.—Large flower, dark scarlet shaded, greenish centre and bars, dark veins.

Catiline.—A delicately coloured fine flower, large, salmon red, a clear white central bar in each petal, well defined, and scarlet.

Minos.—A handsome variety, large well-formed flowers, broad rounded petals, light scarlet veins and edge, pure white bars and centre. A charming novelty.

Faust.—An exceedingly beautiful variety, very large flower, well expanded, petals nearly equal in size, bright scarlet crimson, veined towards the centre of the petals, in each of which there is a pure white well defined white bar, most distinct and bold.

Julius.—Flower well proportioned, reticulated scarlet on a white ground, white central bar in outer petals.

Kingwood.—Flower of medium size, neat in shape, scarlet with darker veins near white central bars.

Antipho.—Quite a novelty, white or blush tinted, speckled with purple from the base. This will probably originate a new race.

Princess Irene.—A well formed flower with broad petals, scarlet with white central bar.

Zephyr.—A distinct novelty; flowers open, broad petals, good shape, white with crimson veins, and light central bars. Two spikes of four flowers each.

Albertus.—Bright scarlet, white central bars, neat form.

Conella.—Dark scarlet, recurving petals, white centre. Showy.

Landseer.—Flowers of great size, rich scarlet to the centre. Very handsome.

Amongst the other varieties that have been described in previous years the following deserve prominent notice for their excellent qualities:—Empress of India, Her Majesty, Cato, Ptolemy, Sir Garnet Wolseley, Southey, Star of India, Bellona, Crown Princess of Germany, Hygiene, Lady Musgrave, and Othello—a very good selection to start with.

CUCUMBERS AND TOMATOES IN THE SAME HOUSE.

To those not thoroughly acquainted with them Cucumbers and Tomatoes show much of the same character in habit of growth. Cucumbers are often trained up wires in pits like Tomatoes, and it no doubt leads many to suppose that they may be grown in the same house, but this cannot be done satisfactorily, especially in the spring months. Cucumbers throughout March, April, and May delight in a good heat, 65° or 70° at least, a close atmosphere, and plenty of moisture. Tomatoes also like a similar temperature, but not a humid atmosphere or syringing. The deformity of many fruits may be traced to water having been placed on the flowers when open. Water at the roots they will take in abundance, but the less applied to the foliage and flowers the better. Cucumbers will succeed with very little ventilation, but Tomatoes can hardly have too much, and they are always most prolific where the air is freely admitted. We find early Tomatoes succeed admirably on the back shelves of vineries and Pine houses where the lights are opened, but in low close Cucumber pits they make very long-jointed wood and form few fruits. I would undertake to obtain more fruits from two plants in pots on the back shelf of a vinery than from half a dozen plants in a Cucumber pit. If a pit is too large for Cucumbers run up a temporary division, grow the Cucumbers in the warmer and closer end and the Tomatoes in the other. I know the idea is tempting in span-roofed houses to have Cucumbers on one side and Tomatoes on the other, but the one or the other must suffer, and the division plan is the one to adopt. During the warm summer months, when Cucumbers will grow in airy pits, the Tomatoes may be their companions, and they will succeed, but it must be June, or July, before the same conditions will be found to suit them both.—J. M.

UTRICULARIA RHYTROPHYLLA.

The Bladderworts are represented by a few species of really horticultural value, and amongst the most notable must be ranked the



Fig. 39.—Utricularia rhytrophylla.

recently introduced Utricularia rhytrophylla (fig. 39). The somewhat peculiar specific name is apparently derived from a Greek word referring to the long, narrow, strap-like leaves, but the chief character of the plant rests in the flowers. These are large, of a fine purplish hue, with an orange-coloured projection at the base of the broad rounded, lip-like portion, and are borne in slender graceful racemes from the base of the plant. It thrives well in small baskets of peat and sphagnum suspended from the roof of an intermediate Orchid house.

PACKING PEACHES.

Having tried nearly every method of packing Peaches for transit which we have seen advised we cling to an old system as the best, and frequently the parcels have been subjected to very rough treatment. Probably sending fruits by parcel post is the most severe test to which they can be submitted. Except Strawberries, forced and from the open

ground, we seldom risk tender wares through the post office. The method now adopted in transmitting Peaches, which has always proved satisfactory, and by a proper arrangement to have the packing material returned, little expense is incurred. Firstly, we have boxes of wood or tin in sizes which hold from a dozen to three dozen fruits, and about 2 inches deeper than good sized fruits. Over the bottom is placed a thin layer of fine paper shavings, moss, or hay, the latter silky and soft as wool, but the shavings being easily procurable they are the most often in use. On this a sheet of wadding is then pressed firmly with tissue paper spread evenly over all to prevent the fruit receiving any bad effects from it. Pieces of wadding about 2 inches wide are cut, also as long as will wrap round the largest Peaches. The pieces of wadding are neatly encased in tissue paper, forming bands which encircle each fruit (the tops and bottoms of the fruits are not covered), placed as tightly as the condition of the fruit will allow. A sheet of tissue paper is placed over the fruit, and another sheet of wadding over that. The lid fits evenly over all, so there is no shifting of the fruit, which is sent off before quite ripe. When the lid is removed with the wadding and the sheet of paper all the fruits are half exposed. They can be unpacked with great ease, or may remain in the box until they are used, just in the same manner as they are exhibited in baskets in fruiterers' windows for sale. The bottom layer of package we often allow to remain undisturbed for weeks. After each box is relieved of its load of fruit the strips of wadding remain inside, and are ready for future consignment. We have had lessons at Covent Garden on fruit-packing, and adhere more or less to our earliest tuition. We noticed on an obscure street in Liverpool a basket of Peaches for sale, packed as above described, which might have been a good lesson to some exhibitors we saw unpacking at a great show.—M. T. C. H.

JUDGING WELL-KNOWN FRUIT BY APPEARANCE.

Sir C. W. Strickland is quite right in saying that the quality of known varieties of both Apples and Pears may be first-rate one year, and perhaps indifferent the following year. This is the experience of fruit growers generally when a bright and warm summer and autumn are followed by seasons the reverse of these, the fault being attributable to the climatic conditions under which the fruits were grown, and not to the apparent fickleness of admittedly good and well-tested varieties. If the inconstancy of the Beurré Bose Pear mentioned is not occasioned by the circumstances indicated, then to what cause must the fact of his fruit being sometimes of fine quality, and sometimes fit only for stewing be attributed, always assuming that the tree from which the fruit was gathered received the same cultural treatment? Sir C. W. Strickland says, "If the object of judging fruit at shows be to promote quality in fruit, and not sham and show, I do not see how it is to be done without tasting fruits." Has not the quality of all the best varieties of fruits shown in competition for prizes been determined years ago by eminent pomologists, the quality of some being settled, perhaps, in the manner indicated? Therefore, assuming that the gentlemen who make the awards are thoroughly acquainted with the quality—the established quality—of the several varieties which they have to judge, all they have to do is to give the prizes to the finest examples of properly ripened fruit, the process of cutting and hacking the fruit not being necessary. A survey of the fruit tents of a well-known west of England Show, where the disfigurement of Peaches, Apples, Pears, and Plums is tolerated by the Committee, and practised by the local judges on the plea of testing flavour is not agreeable to the exhibitors nor edifying to the public, and it is highly distasteful to gentlemen to whom the mutilated fruits belong. In conclusion, I may say that the quality of all fruits worthy of being cultivated in this country having been carefully settled, the object which show committees have in view in offering prizes to be competed for at their shows is to encourage the culture and staging of the finest ripe specimens of the respective high quality fruits, and the prizes being awarded to the largest and handsomest fruit, nobody need feel that these are produced at the expense of flavour.—H. W. Ward.

SIZE versus QUALITY.

The minority of cases where such handsome Lady Downe's are met with as were staged in the any other black Grape class at the Crystal Palace last September is far more important than a majority of such Muscat Hamburghs that were staged in the same class. Had they been competing for flavour alone, the results might have been different; but when better cultivation has to be considered, as it no doubt was in this instance, alters the case materially, and makes the verdict, in my opinion, a correct one. I may save Mr. Ward trouble if I say that I have exhibited worse coloured Muscat Hamburgh as well as better, but the bunch and berry have been double the size, and the bunches quite as compact; therefore I consider the term "moderate" correctly applied in my note on page 82 when alluding to the Muscat Hamburgh at the Crystal Palace. I am curious to learn how these cutters and tasters of fruit manage the home dessert. I guess they have to trust the eye in common with the rest of us, and if they will only cultivate the eye, it can be made almost as reliable as the palate, and can be as safely trusted at shows as at home.—J. H. Goodacre.

ACACIA CULTRIFORMIS.

Several of the Australian Acacias are little known in gardens, though they are useful and distinct plants for greenhouses, and mostly flower profusely in the spring months. One of the rarer species—namely, Acacia cultriformis (fig. 40), was recently exhibited from the Royal Gardens, Kew, and is peculiarly distinct from most of those with which cultivators are familiar. It has flat, somewhat triangular, silvery white phyllodes, and racemes of small, globular, bright yellow flower-heads freely produced along the branches, and when a good sized specimen is in flower it has a very remarkable appearance. An example of this kind may be seen planted out in the Winter Garden at Kew, where an extremely large collection of Acacias is grown. In pots, plants of moderate size flower readily, requiring a compost of peat and sand, with the same care in the supply of water as is needed for hardwooded

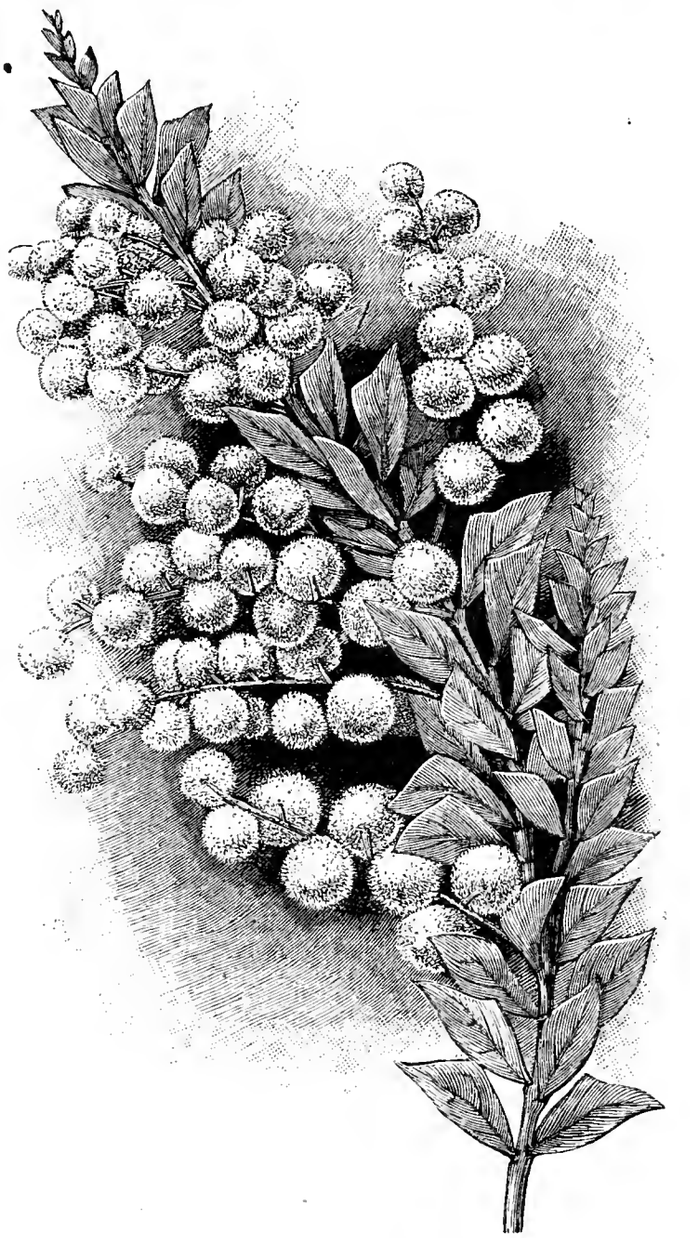


Fig. 40.—Acacia cultriformis.

plants. During the past few weeks some of the florists' shops in Covent Garden Market have displayed bunches of Acacia cultriformis apparently obtained, with others now in demand, from continental growers.

OUR COMMON WHITE BUTTERFLIES.

From talks with gardeners, I find that some amount of ignorance, or at least confusion of ideas, prevails regarding the habits and economy of our two very familiar and abundant white butterflies. As the season is fast approaching when the first flights of these insects will be appearing, it may be of utility to outline the chief facts of their history. It should be premised that of all our British butterflies only these two can be accounted seriously destructive to cultivated plants. A few other species have been referred to as possibly injurious some seasons to certain plants, but they are seldom abundant, or else they usually prefer a different food. Others are now scarce, the black-veined white (Pieris cratægi), for instance, still common upon Hawthorn on the Continent, and

which has occasionally visited the Apple. It was undoubtedly found around London during last century. For a good while it was supposed that the pretty little green-veined white (P. napi) laid its eggs on Cabbages, but Newman and other observers have proved that it seldom seeks these, preferring such wild Crucifers as the Hedge Garlic and Winter Cress.

In the month of March both the species under consideration—viz., the cabbage or large white (Pieris Brassicæ) and the garden or small white (P. Rapæ) are in the dormant condition of their chrysalis life. This endures from the autumn until spring without exception. I have never discovered caterpillars of either during the winter season on Brassicas or any plants, though I have often been shown ravages attributed to them, which turned out on examination to be the work of some Noctua caterpillars, hiding under the soil by day, or else the effect of numerous juvenile slugs. The chrysalids or pupæ of these butterflies being always exposed to the air through the colder months, on walls, fences, trunks of trees, and the like, are necessarily subject to atmospheric influences, but even hard frosts do not hurt them. They will chink against glass like little stones, and yet emerge in due time. Damp winters are possibly prejudicial. So far as my observations go, the insect-eating birds seldom devour these chrysalids. Parasitic foes largely help to reduce their numbers, specially one insect, a small fly, which having pierced a caterpillar deposits a host of eggs ; the maggots feed up and form a cluster of tiny yellow cocoons after the chrysalis has been fastened to some object. These are frequently noticed, and sometimes supposed to be the caterpillar's "eggs." Another fly waits till the chrysalis state is entered and then covers the helpless insect with its tiny eggs, from which issue a hundred or more maggots. A good many of these chrysalids escape, of course, but they should be looked for and removed by the gardener whenever seen. It has been stated they are sometimes buried ; this can rarely be the case. I have seldom found them even on low stems or stalks.

The first to appear on the wing is the small white (P. Rapæ), which might be, indeed, regarded as a pleasant pioneer of the spring, were it not that the progeny of this butterfly is so unwelcome a visitor to vegetables and flowers. Scarce near London for some years, owing to the building over market garden ground, which cut off its supply of food, it has again become a cockney insect since numerous churchyards and vacant plots have been brought into cultivation. Casuals which arrived found an abundance of Wallflowers, Rockets, Nasturtiums, and the like, which attracted them nearly as much as culinary plants, and their numbers have increased since. (I have occasionally taken the caterpillar of this white off Pelargoniums, but it is not partial to that group of plants). The eggs are laid singly, as a rule, so are not easily detected upon the varieties of Cabbage, Mustard, and Turnips, the plants above mentioned, and others, during April. This caterpillar is distinguished from its larger relative by its greenish velvety appearance and its lack of black blotches. It has three yellow lines along the body, and this is studded with clubbed hairs resembling minute pins. From its liking to bury itself in hearted Cabbages it has been called the "heart worm." This is not the practice of P. Brassicæ, which is also more limited in its choice of food than P. Rapæ. This spring brood of P. Rapæ may be adult in three weeks or a month, perhaps sooner, should the weather be warm, and then follows another emergence of butterflies in or about July. To these succeed August and September caterpillars to produce the next year's insects. But some years there are doubtless more than the two broods, and probably, from April to the end of autumn, there is scarcely a day when one might not detect either the caterpillar or butterfly somewhere in the garden. Picking this pest from plants is tedious work, but it may be diminished by a variety of washes or dressings. Few applications, indeed, prove better than water alone, which, if used liberally, brings the caterpillars off their food, and sets up a disease which kills them.

On the whole, I consider the large white P. Brassicæ the more destructive insect of the two, although it comes out later, the butterflies of the first brood being usually on the wing in May. Their eggs are laid during that month on Cabbages of all kinds, now and then on Mustard or Turnip, and as a rule not singly, like those of P. Rapæ, but in small batches of ten to twenty. These hatch in about a fortnight, the caterpillars feed nearly a month with the next or summer brood, the change goes on more rapidly. They are of a bluish green marked with black, the skin is rather rough and hairy. If alarmed they bend head and tail, forming a half-circle, and fall to the ground, which the caterpillars of the small white never do. The dexterity with which they find their way back to the spot they have left is amusing. Another peculiarity in this species is that the caterpillars have a very disagreeable smell. Soon after midsummer we discover the chrysalis on walls and palings. The summer butterflies are, or seem to be, more abundant generally than the spring flight. The second batch of caterpillars must be sometimes at least followed by a third, as I have taken quantities of them in October or a week or two later. Both these butterflies possess the peculiarity of making migrations in parties for long distances. There are undeniable instances of their coming over to us from the coast of France.—ENTOMOLOGIST.

ROYAL HORTICULTURAL SOCIETY.

APRIL 10TH.

THE supporters of this Society are evidently determined that the meetings of the Committees in the new quarters shall not diminish in interest, and efforts are being made both by amateurs and nurserymen to add to their attractions. The second gathering in the Drill Hall, James Street, Victoria Street, on Tuesday last was as effective and varied as could be wished ; but it was unfortunate that the weather continued so cold and unseasonable, for it undoubtedly prevented many visitors attending. During a good portion of the afternoon the Hall had a somewhat deserted appearance, but brighter days and warmer weather will, it is hoped, bring larger attendance at subsequent meetings.

The exhibits on Tuesday were confined exclusively to plants and flowers ; no fruits or vegetables were submitted to the consideration of the Fruit Committee, an exceedingly rare occurrence. A somewhat different arrangement was adopted this time, one broad table extending nearly the whole length of the Hall in the centre, with two other tables near the side walls, and one across the Hall at the end. This allowed ample space for inspecting the plants, and also had a rather better appearance. The central table was devoted to groups and novelties, Messrs. Veitch & Sons' Amaryllises, Mr. B. S. Williams' select stove and greenhouse plants, Messrs. Paul & Son's and H. Lane & Son's Roses, Mr. Pollett's choice Odontoglossums, a collection of interesting plants from Kew, and Mr. C. Turner's new Carnations constituting the leading features. Upon the side tables were displayed extensive collections of Daffodils in endless variety from Messrs. T. S. Ware, Barr & Son, and Collins Bros., with grand Cinerarias from Mr. J. James, Ferns from Mr. H. B. May, and Cyclamens from Mr. W. Clay. The end table was occupied with a group from Messrs. Rothschild, Gunnersbury Park, in which Mr. Roberts had a series of admirable plants of the exquisitely fragrant Rhododendron Lady Alice Fitzwilliam. Besides these were several special smaller exhibits that are mentioned in the following notes. Thirteen plants were found worthy of first-class certificates, including five handsome Amaryllises ; three cultural commendations were awarded and eleven medals.

FLORAL COMMITTEE.—Present : Rev. W. Wilks in the chair, and Messrs. W. Goldring, W. Wildsmith, B. Wynne, H. Herbst, J. Fraser, G. Nicholas, W. H. Lowe, G. Duffield, C. T. Druery, R. Dean, W. Holmes, G. Paul, T. Baines, C. Noble, H. Ballantine, J. Dominy, A. M. Pollett, A. J. Lendy, J. O'Brien, E. Hill, Shirley Hibberd, J. Walker, and Dr. M. T. Masters.

The group of plants from the Royal Gardens, Kew, chiefly comprised Narcissi and Primulas in pots from the new hardy plant house, where such an interesting display is now provided. Very notable were plants of Narcissus triandus and its variety albus, the latter a charming Narcissus for pot culture, with drooping creamy flowers having bell-like coronas. The small bright golden flowers of the graceful N. rupicola, and the still more slender N. juncifolius, received special attention. Of the Primulas the chief were the purplish P. pubescens and P. viscosa, together with the pretty white variety of the former, which is seen under so many names in gardens. P. marginata cœrulea with large pale purple flowers and white-edged leaves was also shown, and the yellow P. Palinuri. From the winter garden in the same establishment came large heads of the handsome Rhododendron Falconeri, having sulphur coloured, large, bell-shaped flowers, and R. grande var. roseum. A small plant of Asystasia, or Mackaya, bella from the greenhouse was bearing numbers of its lilac-veined flowers, and a group of similar small specimens in the house named is one of its most pleasing features at the present time. A large flower head of the old Cineraria cruenta with small mauve blooms was interesting in contrast with the Farnham Royal varieties on the opposite side of the Hall.

Messrs. Rothschild, Gunnersbury Park, Acton (gardener, Mr. Roberts), contributed a group of miscellaneous flowering plants and Ferns, with six even globular plants of Rhododendron Lady Alice Fitzgerald, well known as an excellent early-flowering variety, with large pure white flowers possessing a powerful and agreeable fragrance. A silver-gilt Banksian medal was awarded for this exhibit.

A tastefully arranged group of choice Odontoglossums and Ferns from H. M. Pollett, Esq., Fernside, Bickley (gardener, Mr. Parks), was worthily accorded a silver Banksian medal. The plants were all unusually healthy specimens, and the varieties, too, were some of the best, especially of such beautifully spotted types as O. Ruckerianum and O. Andersonianum, several of which had two racemes each. A remarkably vigorous specimen of O. Wilckeanum had five strong racemes. The beautiful O. Sanderianum was admirably represented by a plant with two long racemes of white-lipped flowers ; O. Schillerianum, O. sceptrum, and O. prænitens forming other noteworthy plants in the group. F. G. Tautz, Esq., Studley House, Hammersmith (gardener, Mr. Cowley), showed a plant of Cypripedium Mastersianum, a curious but not beautiful form, with a short broad green dorsal sepal and brown smooth petals and lips (vote of thanks.)

Mr. R. Ballantine, The Dell Gardens, Egham, showed a strong plant of Cattleya Blunti, having four large pure white flowers, except a faint

tinge of yellow in the long lips (cultural commendation). This charming rare white Cattleya is regarded by some as a variety of C. Mendeli. It was introduced a considerable time ago by Messrs. Low & Co., named after the collector, Mr. Blunt, and first flowered by the late Mr. John Day at Tottenham, but was not certificated until shown by Messrs. Sander & Co. at the Orchid Conference, May 12th, 1885.

Lady Selborne, Blackmoor, Petersfield, sent well flowered stems of Dendrobium nobile (vote of thanks). Mr. F. Ross, Pendell Court Gardens, Bletchingley, showed large heads of the brilliant red Brownea coccinea, and flowering growths of the orange-coloured Bignonia Tweediana (certificated). W. Cobb, Esq., Silverdale, Sydenham (gardener, Mr. F. Cooper) sent a strong plant of a dark rosy coloured variety of Odontoglossum vexillarium, named Fredericki, having eight fine racemes (cultural commendation). Mr. Davidson, The Gardens, Iwerne Minster, Blandford, showed three trusses of Imantophyllum, said to have been "raised from seed gathered in South Africa eight years ago." The flowers were large and of good colour. W. Clay, Esq., Grove Road, Kingston, contributed a group of over 100 well grown Cyclamens (bronze Banksian medal); and W. Roupell, Esq., Harvey Lodge, Roupell Park, had a collection of seedling Alpine Auriculas (vote of thanks).

Chionanthus virginicus, from Messrs. Veitch & Sons, Chelsea, was represented by a number of plants 12 to 18 inches high in 32 and 24-size pots. They were compact little bushes worked on stout stems or roots, and bore numerous drooping panicles of white flowers with long linear white petals much resembling the Manna Ash, Fraxinus Ornus. It is related to the Fraxinus, being a member of the Olive family, and is sometimes popularly termed the Snow-flower (a literal translation of its Greek name). The tree is known and admired in some English gardens, but is rarely seen as a forced plant, though it is evidently well adapted for this treatment (cultural commendation). Messrs. Veitch & Sons also showed a basket of plants of the graceful and useful little shrub Spiræa confusa, which can be forced so readily and yields abundance of its pure white flowers in neat compact umbels. Flowers of Iris reticulata and several good Daffodils together with a group of Amaryllises were included in the Chelsea contribution.

A handsome group of Orchids and novelties from Mr. B. S. Williams, Upper Holloway, secured the award of a silver-gilt Banksian medal. Several fine Amaryllises were included in this group, one of which, Emperor Frederick, was awarded a first-class certificate, and others, such as Empress of India, one of the most useful varieties grown, had two spikes of four flowers each. Amongst the Orchids was the peculiar Dendrobium Smilliæ, which has white, pink, and green-tipped flowers clustered at the apex of stout leafless pseudo-bulbs (vote of thanks). Messrs. Paul & Son, Cheshunt, showed a large group of Roses, Amaryllises and other plants (silver-gilt Banksian medal). Messrs. H. Lane & Son, Berkhamsted, sent some well grown Roses in pots, securing a similar award, as also did Messrs. J. James & Son for their magnificent Cinerarias, which have been noted before this season.

The remarkably fine collection of choice Daffodils and hardy flowers from Mr. T. S. Ware, Tottenham, had their merits recognised by the award of a silver-gilt medal. A smaller group of Daffodils from Messrs. Barr & Son, Covent Garden, gained a silver medal, a similar honour being adjudged to Messrs. Collins Bros., & Gabriel, Waterloo Road, for a group of Daffodils, and a bronze medal was awarded to Mr. H. B. May, Edmonton, for a collection of Ferns.

Messrs. Parker & Son, Bristol, exhibited some extremely vigorous plants of Mignonette, Parker's variety, with large heads of flowers (cultural commendation). Messrs. Hugh Low & Co., Clapton, sent plants of Boronia megastigma, and two varieties named major and floribunda, but the differences were not very striking. Messrs. Backhouse & Son, York, exhibited specimens of Alyssum pyrenaicum, dwarf tufted with numerous white flowers, and P. Allioni with small purplish flowers. Mr. T. Bunyard, Ashford, sent flowers of a late Chrysanthemum with deep red flat florets, something after King of the Crimsons style.

CERTIFICATED PLANTS.

Amaryllises Conqueror, Finette, and Rodney (J. Veitch & Sons).—Certificates were awarded for these fine varieties, which are described on page 300, and also the following not there noted.

Amaryllis Miss Roberts (J. Veitch & Sons).—One of the best-shaped varieties yet raised, very smooth and even. The petals broad, rounded, nearly equal in size, with a central white bar, and veined with bright red on a light ground.

Amaryllis Emperor Frederick (B. S. Williams).—A bold effective variety; flowers of great size, petals very broad, of a brilliant scarlet colour. Strong in habit, the spike having four flowers.

Selaginella cuspidata crispa (B. S. Williams).—A neat tufted variety with fronds 3 or 4 inches long, finely divided, slightly crisped, and dark green. Excellent for pot culture.

Bignonia Tweediana (F. Ross).—A climbing plant, with opposite leaves, each having a pair of narrow green leaflets. Flowers rather suggestive of an Allamanda, with a tube 3 inches long, and a flat spreading limb 3 inches in diameter of a bright orange colour.

Carnation Purple King (C. Turner).—A tree variety of the Clove type, strong in habit, very free, with large full flowers powerfully fragrant, and of an extremely distinct rich purple hue. An excellent novelty.

Carnation Mrs. W. H. Grenfell (C. Turner).—Another Tree Carnation, a rival to Miss Joliffe, of good habit and most floriferous. The flowers are of moderate size, but capital form, and of a delicately beautiful salmon tint. A charming variety, certain to become a favourite.

Rosa polyantha grandiflora (Paul & Son).—This is regarded as an improvement on the old single white R. polyantha, and is a novelty of the present season. The flowers are 2½ inches in diameter, pure white with large petals; it is free and looks well in a pot trained in globular form.

Iris stylosa alba (T. S. Ware).—A pure white variety with large flowers of a well-known favourite Iris.

Cineraria Marie (James & Son).—One of the handsome Farnham Royal Cinerarias, pure white with a purple centre, florets very broad and of great substance.

SCIENTIFIC COMMITTEE.—Dr. M. T. Masters in the chair. Present Messrs. Maclachlan, Michael, O'Brien, Ridley, Professor Scott, and Rev. G. Henslow.

Narcissus, Fringed.—Professor Scott reported upon his examination of this monstrosity, and found that the orientation of the fibro-vascular cords was the same in the fringes as in the perianth leaves—*i.e.*, they are normal with the phloëm on the lower side, and the scylem on the upper, the fringes alternated with the perianth leaves giving the impression that they constituted another whorl, so that the tubular parts below the perianth leaves was probably of the nature of a receptacular tube.

Cyclamen, Fringed.—He also examined the specimens exhibited at the last meeting. The petals were not reflexed as in the usual state, but have crowded outgrowths on the inner surface. The cords were reversed on the outgrowths, the orientation of the tracheæ and phloëm being, therefore, just as they are in the corona of Narcissus. There was, however, no great regularity, the trachcæ very frequently being quite central.

Dr. Masters observed that similar appendages occur on the outside of Gloxinias, and in them the colour becomes reversed as well. Mr. Henslow called attention to the description of fibro-vascular cords as given by M. P. van Tieghem as being too diagrammatic; that where that author laid stress on the reversal of orientation in the anatomy of pistils; it was more general to find the tracheæ central, or else surrounded by phloëm in an irregular manner. This often occurs with the placentary cords which supply the ovules.

Cattleya Trianæ.—Mr. Smee exhibited a monstrous form, which was referred to Mr. Ridley for examination and report.

Hazel catkins. — Dr. Masters exhibited specimens bearing small clusters at the base of the male, as well as in the usual terminal position.

Cyclamen, with laciniate petals.—Mr. O'Brien exhibited a flower with petals cleft into several lobes, a result probably of some degree of impoverishment.

Quercus Skinneri, Acorns.—Mr. T. Christy sent specimens received from Mexico, for tanning purposes. They are remarkably large, being from 1 to 1½ inch in length, and three-quarters of an inch in diameter. They were introduced originally about thirty years ago.

Citharexylum lætum.—He also forwarded seeds of this plant—also from Mexico. The "nestlets" are oval, plano-convex, and deeply grooved within. They are used for a beverage, which is said to be intermediate in flavour between chocolate and coffee. Certain species of Lantana, of the same order, Verbenaceæ, are used for tea; but whether either genus contains alkaloids allied to Theobromine or caffeine is not known.

GENERAL MEETING.—A general meeting of Fellows was held in the new offices, 111, Victoria Street, at 3 P.M., Sir Trevor Lawrence, Bart., M.P., in the chair, the following members of the Council being present:—Dr. Robert Hogg (who subsequently took the chair), W. T. Thiselton Dyer, Professor Michael Foster, A. H. Smee, H. J. Veitch, D. Morris, G. Paul, and the Rev. W. Wilks (Secretary). Sir Trevor Lawrence stated that the business of the meeting was the consideration of the new by-laws prepared by the sub-Committee of the Council and Fellows, and which were to provide for the admission of guinea Fellows and Associates, as well as making some material alterations in other matters. It was found necessary, however, that the new by-laws should be placed in lawyers' hands for revision and comparison with the conditions of the Charter, to avoid any illegality. In consequence of this only a small portion could be taken at the meeting—namely, that which had been passed by the lawyers, and which would enable them to elect the numerous persons nominated as Fellows. Considerable discussion took place respecting the advisability of postponing this matter until the Fellows had had time to examine the new proposals; but after the Secretary had carefully read the old and new by-laws clause by clause it was resolved that the latter be adopted up to the end of chapter 4, the whole of the eighteen clauses dealing with the election, subscriptions, and privileges of Fellows and Associates. The Secretary read the names of over 200 persons—viz., 166 as one-guinea Fellows, thirty-two as two-guinea Fellows, and several four-guinea Fellows, and two Associates, all of whom were duly elected.

It was stated that the Society hopes to be able to arrange for a large exhibition, to be held in the Inner Temple Gardens on May 17th next, and the following Sub-Committee was appointed to make the necessary arrangements:—Messrs. W. Wilks (Chairman), Baines, Herbst, H. Turner, H. Williams, and Howard. The President had also communicated with the Corn Exchange authorities, and it was thought that an exhibition of autumn flowers and fruit might be held there at the end of September, with Chrysanthemum and fruit show at Chiswick in November.

At the Council meeting, the President reported the purport of an interview he had had with the First Lord of the Treasury on the subject

of joining Horticulture to the proposed new Department of Agriculture, and also stated that he had received a letter from Lord Salisbury (which he read) to the effect that the powers of the new Department would cover the interests of horticulture. Dr. Hogg was requested to represent the Society at the proposed International Horticultural Exhibition at Cologne in August next, under the patronage of the Empress Augusta of Germany.



ROSE SHOWS IN 1888.

June 28th.—Brockham and Ryde.
June 30th.—Eltham and Reigate.
July 3rd.—Bagshot, Canterbury, Diss, and Hereford.
„ 4th.—Croydon, Hitchin and Richmond.
„ 5th.—Bath, Farningham, and Norwich.
„ 6th.—Sutton.
„ 7th.—Crystal Palace (National Rose Society).
„ 10th.—Ipswich and Tunbridge Wells.
„ 11th.—Ealing.
„ 12th.—Birmingham, Carlton-in-Worksop, Oxford, and Winchester.
„ 14th.—Gloucester* and New Brighton.
„ 16th.—Newcastle-under-Lyne.
„ 17th.—Leek and Ulverstone.
„ 18th.—Birkenhead.
„ 19th.—Helensburgh.
„ 20th.—Darlington (National Rose Society).
„ 21st.—Manchester.
„ 24th.—Tibshelf.

* The date of this Show is not yet definitely fixed.

In the above list the only exhibitions not held by the National Rose Society, or by Societies in affiliation with it, are those at Birmingham, Carlton-in-Worksop, Manchester, Newcastle-under-Lyne, Richmond, and Tunbridge Wells. In the case of Birmingham and Tunbridge Wells, where the shows extend over two days, the date of the first day's exhibition only is given. I propose issuing my next list of Rose fixtures early next month.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

PRUNING ROSES.

ANY Roses pruned in February with the idea of securing early blooms have had a bad time, and in addition to being much crippled will be later than those pruned late in March or early in April. We ought now to be through the worst of an unusually long winter, and the Rose pruning should be completed at once. There are a few simple rules to be observed in all cases. It is of importance that the heads of standards be freely thinned out, those with crowded centres rarely producing a good succession of fine flowers. They ought also to be kept within bounds, as if any strong shoots are allowed to extend unrestricted the head soon becomes lopsided. Irregular growths, then, should with old wood be cut back to a well-placed growth nearer the centre. This foreshortening, as it is termed, tends to keep up a supply of growth from near the centres, and preserves a neat floriferous head. Very gross shoots may well be cut cleanly out, and all useless spray ought also to be removed. Shoots near the size of a lead pencil are usually the best ripened, and these if shortened to a length of about 5 inches will produce plenty of blooms. Coarser than this to be left from 6 inches to 8 inches, and smaller from 2 inches to 4 inches in length. In every case cut close to an outside bud. It would be a great mistake to severely prune strong shoots, those resulting from this being still more gross and perhaps flowerless, while to lightly prune weak growth only leads to the formation of useless spray. These remarks are equally applicable to both Hybrid Perpetuals, and Teas, and Noisettes, Maréchal Niel excepted. Standards of the latter ought to be freely thinned out in order to cause the early formation of a few long shoots. Weakly growth also to be shortened, but long well-ripened shoots should be reserved to near their full length and loosely tied, this arching insuring the production of fine blooms at nearly every joint. Hard pruning will cause the Gloire de Dijon to form extra vigorous growths, and these will flower freely at every joint late in the summer.

DWARF ROSES.

These as usual have withstood the effects of the severe frost and cold winds much better than the standards, many of the latter having been killed outright. There are two methods of pruning these. Many, however, neglect them or imagine they require no pruning at all, but unless thickets of weakly growth and small flowers are preferred they must receive an annual pruning. Where they push up strong growths every season these may be shortened to about two-thirds of their length and pegged down all round the plant. All useless spray to be cut out and stiff upright medium-sized growths shortened back freely. Thus treated they will produce fine flowers all over the plant, a quantity of young shoots also being pushed up from the centre of the plant. These pegged-down growths to be cut clean away after they have done duty once, and their place occupied by the young growths as before. The alternative system of pruning is much the same as advised in the case of standards, and bushes thus treated are frequently very serviceable and produce a long succession of bloom every season. Those on the Manetti stock ought always to have their stems buried, the Roses eventually becoming well rooted and independent of the stock. Manetti growths must not be mistaken for Rose shoots, and all that are detected ought to be cleanly cut out.—W. I. M.

ROSES IN POTS.

[A paper read by Mr. D. Gilmour, junr., at Walkley, Sheffield, on March 9th, 1888.

IF we are to be anyway successful in the culture of Roses in pots, we must do as we have to do in other horticultural pursuits—that is to say, we must bring our reasoning powers into play. Depend upon it the man who thinks the most, who reasons the most, who, when he fails in anything, sets to work deliberately to find out the why and wherefore of his failure—I am coming to the most important part now—and who, when he does discover the cause of his failure, makes a mental never-to-be-forgotten note of it, and so avoids it in future, is the man who will be successful. It might be possible for one of the unthinking ones to go on all right in a beaten track for a time, but set him in a new place, give him a mental nut to crack, and behold what a dismal mess he makes of it. Do not suppose for a moment that I am an advocate for an amateur, or professional either, sitting over the fire or in his house, thinking, while there is work to be done in the greenhouse. There is no reason why a man should not think and work at the same time.

In growing a plant in a pot, we should remember that it occupies a very different position compared with one that is planted out and growing in a border. Where the roots of a plant can wander about in the soil the plant can pick and choose, as it were, what it will take up and what it will reject. In a pot this is different. Here the plant can only have what is contained in the pot, or what we administer to it; and remember it has to accept the whole of what we put there—it has to take up everything, and this is the reason why we may often, with impunity, pour over the roots of plants in the border strong liquid manures, which similarly applied would quickly destroy and kill the same plants if they were growing in pots.

I think the two greatest enemies to plants in pots are want of drainage and sour soil. Perhaps the one is the cause of the other. Many people do not see any necessity for drainage; they do not understand why careful gardeners put all those crocks in the bottom of a pot. In the same way the same people cannot see why farmers and gardeners go to the expense of putting in drains. Why do they do it? Because the question has been thought out by some of these people who think, and who, thinking and building experiments on one result after another, long ago discovered that plants will do no good if the soil in which they grow is kept too moist. I could go into this question scientifically and give you the results of some of these experiments relating to the why and the wherefore of draining, but shall ask you to take my word for this much, that drainage in pot plants is absolutely necessary. Even in cases where we use every effort to keep the drainage right the soil may become sour, and I have heard it said that the roots of plants will never have anything to do with any portion of the soil which has once become sour. There are several points, the neglect of which may lead to sour soil. I am leaving drainage out of the question now. One of the first or most likely causes is potting or repotting a plant into too large a pot; another is over-watering a plant, keeping the soil in an everlasting state of slop; still another is potting the plant in soil or compost which is too close and binding, and which does not allow the water to percolate through. There is one more point which I may mention as a reason why soil becomes sour, and it is this, that many amateurs and gardeners when they are not certain that a plant requires water press their fingers on the surface of the soil; the result is that the soil becomes like a cake. Now you may think this is rather inconsistent, as I shall shortly advise you in potting your plants to ram them as hard as a brick. My advice is sound for all that, and I can best illustrate it by taking as an example a newly metalled road over which a heavy roller has been passed. You will notice that though the stones are rolled down into a flat surface there are still many crevices between them; it is the everyday traffic that eventually consolidates the stones into one close, even surface. No matter how hard you press your soil down with the potting stick, there will still be cracks and hollows where the water can filter through. It is the constant small and light pressures of the fingers at a time when the soil is wet, more or less, and it is these pressures repeated again and again, that eventually consolidate the soil and make it impervious to water, and then very quickly afterwards sour. I do not think it by any means a waste of time to remove the surface soil from pot plants; indeed, I should prefer while I had the job in hand to go down until I saw the white roots showing. The old soil should be removed and fresh mixture or compost supplied. This may be done often.

I had better begin as I ought to have done at the first, and take the different parts under their proper heads. First, then, How shall we best form a collection of pot Roses? If we have the necessary cash at our disposal I should say, "Buy a collection ready made;" but even in that comfortable state of affairs and pockets there is another view to take of it—a man looks with very different eyes and feelings on his own children as compared with those of other people. The same thing applies to almost everything. And so a man takes a great deal more pleasure and pride in plants that he has formed and educated himself.

I will suppose, then, that we decide to make our own collcetion. For this purpose I recommend that fine open ground plants be procured from the nursery early in autumn. I say early, but we may defer getting them until after Christmas, even up to now (8th March) if we think proper. The plants should be potted without loss of time. Remember to ram them very hard, and this constitutes our first step. Our next step is to place the plants in a cold house. Plants newly potted should not have any heat at all during the first year, but should simply be allowed to commence growth at their own sweet will. I may say here that a number of plants which were so potted up about last Christmas, or a little later, and placed in a cold house, are now covered with good red shoots, and in some cases with foliage. It will save much trouble if these plants are plunged in leaf soil ; so placed, they require very little attention in watering. As soon as the buds begin to swell the plants should be pruned back to good strong eyes, and they should be syringed in dry weather. They will bloom in course of time and grow strong, but some time about the end of June they should he put out of doors in a sunny situation. If they have made sufficient growth and have some good shoots on them I am in favour of stopping any further growth by letting the shoots become dry gradually at this period, but never allowing the roots to become dust dry. If this ripening is proposed the pots should not be plunged ; but if we wish for larger plants, or that the growth should continue, we should plunge the pots and keep the roots moist. But if we intend our plants for early blooming the following spring we must ripen them in good time. The pots must be raised out of the ground and placed on a hard surface, while water is withheld as before advised. August is the latest date I should fix for this. The longer our plants remain outside the better. The cold nights, the dews, the breezes, and the sunshine will all help to ripen the wood and produce buds that will give us fine blooms. If hard weather sets in before Christmas the plants should have the shelter of a frame, or be placed under a wall or in some cosy place. They may come into heat almost any time after being thoroughly ripened, and be grown successfully. When I say heat I mean the ordinary temperature of an amateur's greenhouse. They may be pruned when brought in, and should not then have more water than is really required until the buds break and leaves begin to form. At this time the top soil should be taken off, using a pointed stick, and fresh soil added in its place. When the plants have bloomed all of them that require it should be carefully repotted, after which they may either be returned to the greenhouse for a fortnight, keeping the leaves as moist as possible, which enables the roots to get hold of the new soil, or they may be at once plunged outside as before.

In potting the plants at first let them be placed into pots as small as the roots will allow. If you err on the question of drainage, err on the side of too much rather than too little, the compost should be made up like this :—One part old sods or good turfy loam, half part of old manure, one-eighth part of leaf mould, one-eighth charcoal or sand. The compost should not be riddled bnt well mixed together. The pots must be well rammed. Any old thick roots should be removed or cut back, hut all fibrous roots should be preserved. Some of the plants may make so much growth and so many roots that it may be necessary to repot them dnring the first season. In that case place them into pots the next size larger, taking care not to break the young roots. As a rule one repotting a year should be sufficient.

Pruning Roses in pots is rather a tough subject—I mean that it is a tough job to reconcile the teachin s of the various masters of the art. My plan is a very simple one, and I adhere to this rule, "The more you remove from a Rose tree the finer the blooms will be." In the case of H.P.'s, I advise that all the branches he cut back to, at most, three eyes or buds, and the result will be generally one or two strong shoots from each branch. This system will save an immense amount of tying work, bending shoots down, &c., and in my opinion give a better result. With the long and coarse-growing Teas, the Dijon section, and Maréchal Niel, this short-pruning system will not answer ; these, blooming on laterals thrown out from last season's wood, must have some of the branches left long, simply removing the unripe and weak tops. But the dwarf-growing Teas flourish on the hard-pruning system, and give magnificent flowers, so I shorten my dwarf Teas back to ahout two eyes on each shoot. I have probably 200 standard Teas in pots ; some of them this year were cut back hard, while others only had the weak and old wood taken out. In the one case I have strong vigorous shoots, grand foliage, and magnificent blooms; in the other I have weak foliage and small blooms. The moral is obvious.

For greenhouses the standard has many advantages, particularly for amateurs whose space is limited. The plants are lifted up so as not to interfere with smaller growing things; they get more light, and are neither so crowded themselves nor do they crowd other things as they do when grown as dwarfs and on the same level as everything else on the stages. Another advantage is, that after the first blooming the branches may be tied down like the ribs of an umbrella, and the result will be the bursting out of strong new breaks which generally carry the best blooms of the season.

I must go back again to the subject of watering, for although growing Roses in pots is made up of a number of small matters I really think that of watering is the most important ; and I think it is the matter in which discretion is most called into play. If a plant is newly potted, or is without leaves, or if there is no growth going on, it stands to reason that a less quantity of water is wanted. Where a plant is in full growth, or where the pot is full of roots and the plant growing, we may give water freely. But I would far rather see a plant have too little water than too much. The plant in the former case will give us notice of its wants by drooping its leaves, though it is not wise to allow matters to go so far. In the latter case we shall find the leaves turning yellow, but at this stage I should say the soil in the pot has become quite sour, and the mere withholding of water will not restore sweetness to it nor healthy growth to the plant. The infallible rule for all is the knuckle applied smartly to the side of the pot ; if it ring out bell-like water is wanted, if it sounds dull and solid none is necessary. It is astonishing how much drying a pot Rose will stand. The roots may be dried until the shoots shrivel and the plant appears to the eye quite dead, hut plunge it into a tub of water for twenty-four hours, and behold ! the shoots plump and green and the buds again swelling.

I am afraid that, so far, most of my remarks will apply more to the Tea Roses than the H.P.'s. I certainly consider it a waste of time to grow these latter in pots, for various reasons. One is, hecause we can grow them better and with less attention in the open ground ; another is, that when we take one crop of blooms from the H.P.'s we are not likely to get another for some time. Another reason is, that the Teas stand more knocking about—don't smile, let me finish—I mean that they do not want so much rest, and they may be made to bloom much more certainly at such times as Christmas for instance. Take the grand old Tea Rose Niphetos, or the almost equally useful and beautiful Caroline Kuster ; one can get from four to six (may he more) crops of blooms from these Roses in one season. Where is the H.P. that will stand this sort of work ? I know of none, and I do not think you do either. However, if we must have H.P.'s in the house, after they have bloomed once they are best outside, as they take up too much room and attention inside. If they make a good growth, equivalent to the spring growth of plants in the open, that is all that is necessary ; this is the wood we want for blooms next season. If we dry them off small blooms will probably form during summer ; these should be pinched off.

A few words on manures. These are only of advantage when the plant is capable, or in a fit state to absorb them. To give manure or stimulants to a weak or sickly plant is simply poison to it. Where a plant is growing in such a compost as I have described it needs very little until the roots have filled the pot. Then, if the flower buds are formed weak liquid manure may be administered, but give too little in preference to giving too much. Weak and often is better than strong and seldom. Feasts and famines are neither of them good for the human digestion, no more are they beneficial to plants. This liquid, whether it be made of horse or cow dung or sewage, and these are the usual materials employed, should not be stronger in colour than ale, if there are any abstainers here I don't mind saying ginger ale.

Where we do not, or cannot, repot our Roses, we may keep them strong and healthy for a long time hy the use of stimulants and patent manures. These are bones, bone dust, dissolved bones, and other concentrated preparations. These should be put on the surface, or mixed with the soil we top-dress with, when the plant is in growth, not when it is at rest. I must say something about that curse of Roses—mildew. This is often the ruin of crops under glass. An attack may be brought on very quickly with forced Roses by simply opening a ventilator and letting the cold wind in for a few minutes. It cannot he so easily cured. When we can command hot pipes the remedy is simple. This is to paint said pipes with sulphur made into a paste, hut do not have too much fire at the time you apply it. In cold houses we must prevent mildew. Keep it away, once it gets a footing in a house it is good-bye to blooms and leaves for some time. We must keep it away hy using when we syringe a little softsoap at the rate of half an ounce to the gallon. The hest way to prepare this is to mix 2 lbs. of softsoap with hoiling water, adding at the same a wineglassful of petroleum, and making up the quantity with hot water to five gallons. If a little tobacco juice be added all the better, or rather all the worse, for the green fly. When we do syringe we must put half a pint of this delicious mixture into a large can of water. This receipe is pretty sure to be correct, because I had it from the "Gardeners' Year Book."

In conclusion I will give a list of the very best varieties I know of for pot work :—Alfred Colomh, *Baroness Rothschild, Beauty of Waltham, Boule de Neige, Captain Christy, Charles Lefebvre, Dr. Andry, Dupuy Jamain, Edward Morren, Henri Schultheis, John Hopper, *La France, Madame Lacharme, Madame G. Luizet, Madame V. Verdier, *Marie Baumann, *Marquise de Castellane, *Merveille de Lyon, *Senateur Vaisse, and Souvenir de Malmaison. These are all H.P.'s except Malmaison. The hest six are perhaps those marked *. Almost all the leading varieties of Teas give good results in pots. I will just name the very best—Anna Ollivier, The Bride, Catherine Mermet, Madame Charles, Madame Falcot, Madame Lamhard, Madame Willermoz, Marie Van Houtte, Niphetos, Rubens, Souvenir d'Elise, Souvenir d'un Ami, and Sunset. Noisettes—Maréchal Niel, and Madame Caroline Kuster.

THE ORCHARD HOUSE.

[A lecture delivered at Birmingham on the 13th ult., by T. Francis Rivers, Esq.]

(*Continued from page 276.*)

PEAR trees under glass amply repay for cultivation, the protection from spring frosts rendering the crop a certainty. Grafted on the Quince stock the trees become very fruitful and dwarf, and are exceedingly easy to cultivate. After commencing to bear they grow very little and give all their energy to the fruit. I often think that their cultivation would be a considerable source of profit, but for this purpose none but large and late sorts should be used, such as the Doyenné du Comice, Marie Louise, Duchesse d'Angoulême, Winter Nelis, Marie Benoist, and the Easter Beurré.

The grower would, I think, soon find customers among the connoisseurs in the country. The most inexpensive form of cultivation is, I think, that of using perforated pots and small pyramids, a rough glass shed, 100 feet by 24 feet, could be filled with trees about 18 inches apart, these may remain in under cover until about the end of May, or at all events until the danger of severe frost has passed, the young fruit of the Pear being very liable to injury when it is the size of a small Filbert. They should then be removed to a border specially prepared for them by draining and loosening the soil, and plunged up to the rim of the pot. As they will then be out of doors, they will not require so much attention in watering, but they must be kept fairly supplied, and when taken out of the house a mulching of manure must be placed over the pots. Liquid manure, as used for Peaches, should be given about once a week. Tom tits are very troublesome when the fruit has attained its full size, as before ripening they will pick a little piece of the flesh out near the stalk and leave the rest to decay. I am obliged to net the trees, but if expense is no object a wire house will amply repay the cultivator. During the summer the roots will push through the holes in the border, and thus gain strength enough to ripen large and fine flavoured fruits. At the end of October or in November all these roots may be cut off and the tree repotted; they can then be packed closely together, the pots protected from the weather with straw or dead leaves, and remain until the end of February, when they will be ready to put into the house for another season's crop. As it is a great strain on these little trees to bear continuously it is well to have an alternate supply, one bearing and the other out of doors and non-bearing. Very little pruning is required, the shoots should be pinched in May and June, after these months the fruit will absorb the vigour of the tree.

Apples grown under glass attain a flavour rarely equalled out of doors, especially the American sorts Washington and Melon, and the English Cox's Orange, the latter when kept entirely under glass is transformed, it becomes full of juice, and has the texture of flesh which we generally consider the attribute of the Pine Apple. The Washington is a sight to see, indeed I believe some were exhibited in a fruiterer's shop at Tunbridge Wells, for which he asked a guinea apiece. Grafted on the Paradise stock they are as dwarf and as fruitful as Pears, and may be grown in exactly the same manner, as, however, there is generally an Apple crop in England their cultivation under glass is not a matter of absolute necessity. If the glass shed used for protection has a row of hot-water pipes it may be used for Black Hamburgh Grapes, but the heat must not be applied to Pears. In my district Hamburghs will ripen without fire heat, but in the northern parts of England I do not think this is often the case. I only speak of Grape Vines for this glass shed; but the orchard house for Peaches, &c., must have the roof clear. Grapes may, however, be grown as small standards in pots, and are exceedingly ornamental. If the early but small Grapes are grown these little trees may be taken out of doors in August. The fruit will ripen in a fairly warm autumn, and so will Figs in pots, but the large leaves and vigorous growth almost banish them from an orchard house; if, however, a warm corner can be found for them they will give a good supply of fruit. The great secret of cultivation seems to consist in pinching the young shoots; unless this is done the tree will grow without fruit. The first shoot should be stopped at the fifth or sixth leaf, and the young fruits will immediately appear.

During the last few years, and mainly owing to the orchard house, a very great advance has been made in the season of ripening of Peaches and Nectarines. Under glass this now extends from the first week of July to the first week of October. I may here say, that although in the south of England artificial heat may not be absolutely necessary, it cannot be dispensed with in the cooler districts, and it is specially desirable during the early spring and the late autumn, a single pipe round the house being sufficient. With this help Peaches will ripen the first week of July, and a continual supply be kept up until the first first week in October by the following sorts, which are arranged in the order of ripening:—

JULY.

Alexander Peach
Waterloo "
Early Beatrice Peach
" Louise "
" Rivers "
" Hale's "
" Leopold "
Advance Nectarine

AUGUST.

Early York Rivers Peach
Condor "
Early Alfred "
Goshawk "
Lord Napier Nectarine
Early Grosse Mignonne Peach
Dr. Hogg "
Crimson Galande "
Magdala "

SEPTEMBER.

PEACHES.	NECTARINES.
Grosse Mignonne	Goldoni
English Galande	Stanwick Elruge
Alexandra Noblesse	Rivers' Orange
Royal George	Spenser
Barrington	Pine Apple
Nectarine	Humboldt
Princess of Wales	Victoria
Sea Eagle	
Lady Palmerston	
Golden Eagle	

This list is, of course, intended for pot cultivation, as the sorts are too numerous for trellis training. I have also confined myself to Peaches and Nectarines, as they are not perhaps quite so well known as Plums, Pears, and Cherries.

Although the orchard house was devoted expressly to the English dessert fruits, I propose to show that with some modification the system may be made available for a very luxurious purpose, although not more difficult or expensive than Grape-growing, and that is the cultivation of the Orange. The Orange house was formerly a necessary appendage to great mansions, and usually a building of the most dreary character, the Oranges generally grown being small and bitter. Many years since a gentleman made my father a present of some Tangierine Orange trees, which were placed in the orchard house, and taken out of doors in the summer. This happened in one of our rarely hot seasons—that of 1858, I think—and the trees ripened their fruit as readily as Green Gage Plums. After this hot summer came the cold series, and as the Tobacco cultivators will find out to their cost one hot summer is not always followed by others. The impetus was, however, given, and my father and myself began to collect varieties of Oranges, Lemons, Shaddocks, and Limes, all of which I have proved can be as easily grown as Peaches or Grapes. The temperature of an Orange house in winter should be about 50°; in the summer heat it is necessary to give plenty of air. The house is a pleasant winter walk from October to March, almost cheating one into the belief that the promenader is transferred to Valencia without the damp and enervating climate. The fruit will last on the trees without any loss of flavour for six months, and may then be gathered and eaten. The soil which the Orange prefers is a ferrugineous loam. In some parts of Italy, I understand the plantations are manured with beggars' rags, and it was once an article of belief that a sick Orange immediately recovered if a dead dog was buried at the roots. Cotton cake and scraps of leather are both good fertilisers. The great point to be urged is the necessity of a light, large, and lofty well ventilated house, not too lofty, because of the difficulty of keeping the trees free from scale, which, as all Orange planters know, is a direful evil. In my own house I sometimes use a wax taper in the corners of the branches, and the bark may be washed with petroleum. The leaves, however, must be sponged with warm water by a skilful and tender hand, as any bruise or rough handling soon brings about an injury. I have collected about fifty sorts of Oranges, Lemons, and Limes. These are very interesting from the great variation in size and flavour, and one soon learns to appreciate the difference. The Maltese Blood Orange, I think, bears away the palm, but the varieties of the St. Michaels are very good indeed, the best of them being the Sustain, next the Long and Silver, and also the sort usually grown for commeree. The Seville or Bitter Orange flowers more abundantly and more frequently than the St. Michaels; hence, if grown for the flowers alone it is likely to be more profitable. Although I am not prepared to say that as a commercial speculation Oranges grown in England can compete with Florida or Valencia, there does exist a considerable market for Orange flowers; the speculator must, however, avoid the season of Lent, when his wares are somewhat depreciated in value. Lemons and Limes may be grown on the back walls of vineries, and really make a very useful return, and will produce more abundantly than Oranges when trained. They also can flourish even when partially shaded. It seems almost extravagant to speak of Orange groves in England, but there is no real difficulty, and I am certain that if sanatoriums on a large scale are erected an Orange grove will form a most interesting and pleasant winter promenade.

The Tangierine Orange is almost hardy. It is dwarf and seldom grows to a greater height than 5 or 6 feet, and therefore when grown in tubs can be easily removed to the open air for the summer. Placed in a warm part of the garden, the fruit will ripen even in moderately warm summers, and if they do not the fruit will come to perfection when returned to the Orange house. Plucked fresh from the tree it is delicious, and is quite as good in England as in Lisbon.

This is, I fear, a dull lecture. It is impossible to avoid being technical in treating of technical matters, but I hope that I have been able to make my meaning clear. Although I am somewhat enthusiastic on this particular subject, I do not wish to lead anyone astray or to encourage an unjustifiable expense. Time, it is said, is the only real authority for a patent. As nearly forty years have passed since the first glimmerings of a new system of fruit cultivation, I may, I think, venture to hope that time has patented the orchard house.

ROYAL CALEDONIAN, EDINBURGH.

THE spring Exhibition held on the 4th and 5th inst. was, owing no doubt largely to the extreme severe weather experienced during the previous five or six weeks, hardly so full, especially of plants, as on some previous occasions. The prizes offered for a table of plants 20 feet by 5 feet brought only one competitor, Mr. Donaldson, gardener to H. E. Moss, Esq., Murrayfield, to whom the first prize was awarded. Messrs. R. B. Laird & Sons, West Coates, were in the same position in the class devoted to nurserymen; the main feature of the arrangement being some large Azaleas and Palms in a groundwork of small flowering plants and Ferns. Mr. Robertson Munro was the only exhibitor who set up a table of hardy spring flowering plants. With sixteen forced plants, Mr. McKinnon, Melville Castle, Lasswade, had first place, and Mr. McIntyre, The Glen, second. For four Azalea indica, Mr. John Patterson, Millbank, was first with large grandly flowered specimens. For two varieties Mr. McLennan, Restalrig House, had very good examples, to which first prize was awarded. Mr. Patterson was first also in the class for one plant. With six greenhouse plants the same exhibitor held first place, showing two fine Azaleas and a good Erica profusa, E. Victoriæ, and an Epacris. In the class for four plants, Mr. Grossart, gardener to J. Buchanan, Esq., Oswald House, was first. Mr. Patterson was again in the first place with four Heaths.

With six Orchids Mr. Curror, gardener to Geo. Douglas, Esq., Eskbank, was first with grand pieces of Cattleya Trianæ, Dendrobiums fimbriatum, oculatum, Wardianum, Devonianum, and nobile. Mr. Grossart was second, having a very noteworthy plant of Cymbidium Lowianum. In the class for three plants Mr. McIntyre was first, and Mr. Patterson second, the names being reversed in the one plant class. A good piece of Cypripedium hirsutissimum was the premier plant. A few Orchids were exhibited by Mr. McIntyre, including a good specimen of Dendrobium Leetchianum, and two Odontoglossums.

Mr. Grossart had the best four foliage plants, Mr. D. Ramsay, gardener to J. T. Black, Esq., Gogar Park, being first in the corresponding class for two foliage plants. For eight foliage plants in 8-inch pots, Mr. McIntyre, gardener to Sir C. Tennant, The Glen, was first with nice clean plants, Mr. Grossart, the other exhibitor, being disqualified on account of a slight infringement of the conditions. The chief prizes for Ferns went to Mr. Forbes, gardener to P. Niel Fraser, Esq., Murrayfield, for four sorts; to Mr. Patterson for Gleichenias; to Mr. Plenderleith, Grange Loan, for Adiantums; and to Mr. Forbes for Filmy Ferns. In a strong competition Mr. Patterson came out first for six Roses in pots; Mr. James Bald, Canaan Bank, second; and for three pots, Mr. W. Howie, Inch House, Liberton, was first. Mr. Bald had the best Amaryllises, very good plants. Deutzias were a large class, and Mr. McLennan had the best two, and Mr. D. Ramsay, Gogar, the best single specimens. Of Cinerarias, Lily of the Valley, Mignonette, &c., the competition was not so strong as we have noted in former years, but the quality was very good.

With Dutch bulbs there was a strong competition. For twenty-four Hyacinths open to nurserymen, Messrs. R. B. Laird & Sons were first with strong even heads; Messrs. A. Kerr & Sons, Kalemouth Nurseries, Roxburgh, second, with a less even, but good collection. In the gardeners' classes for twelve Hyacinths, Mr. H. Lime, Ridge Park, Lanark, was first with spike clean and well grown, but lacking in size; Mr. T. Scott, gardener to H. Davidson, Esq., Braedale, Lanark, second. For eight varieties, the first prize was without name. For six, Mr. Dunlop, South Bank, was first. Mr. Barnie, Jock's Lodge, Portobello, has the finest nine pots Tulips, and also the best garden Narcissus. The prize for six pots Tulips being awarded to those from Mr. J. Patterson, Willow Brae House. Mr. Grossart having the best Polyanthus Narcissus. The sorts were those shown in former years.

Amongst cut flowers Roses were the chief attraction, Mr. James Walker, Clarendon, Linlithgow, securing the first prize for twenty-four with very clean, not large, but even buds; Mr. W. Parlane, Rosslea, was a good second. For twelve Roses, Mr. J. Ramage, Wallhouse, was first. Mr. Peason, Beechwood, Corstorphine, had the best Maréchal Niel, twelve buds, smaller than those usually shown from the Beechwood Gardens. Mr. Grossart was the only exhibitor of twelve trusses stove or greenhouse plants, and had first prize, also first for cut Orchids; Mr. Cockburn, Coltbridge Hall, second. The best hand bouquet was from Mr. T. J. McDonald; Mrs. Ure, 144, Princess Street, having the best table bouquet; and Mr. R. Cockburn the best buttonhole bouquets.

The fruit was chiefly remarkable for the display of Apples, which were much finer in colour than is usually the case. Only three pairs of bunches of black Grapes were set up, Mr. Smith, Oxenford Castle, having the best Lady Downe's; Mr. McKinnon, Melville Castle, was second with Alicante. Mr. McKelvie, Broxmouth, Dunbar, had the best dish of Strawberries; Mr. Pirie, Selkirk, second. Mr. McKelvie was also first for dessert and kitchen Apples, twenty-four of each; Mr. Brunton, Gilmerton, second for dessert, and Mr. Potter, Seacliffe, for kitchen sorts. The best sorts were Alfriston, Tower of Glamis, Kentish Fillbasket, Yorkshire Greening, Blenheim Pippin, Wellington, Grange's Pippin, Sturmer Pippin, King of Pippins, and Flower of Kent. A collection of seventy dishes from Mr. Brunton had a special prize awarded. Messrs. Brunton and Potter had the best collection of Pears in their respective classes. Mr. McIntyre, The Glen, was the only exhibitor of a Pine Apple, and had a first prize awarded to a fruit not quite ripened.

Vegetables were fairly represented. Mr. G. Potter, with a very good selection had the first place. Mr. Milne, Sunnybank, was first for collection of salads; Mr. Geo. Greig, Caigend Park, first for a good brace of Cucumbers. Extra good Mushrooms were shown by Mr. Gordon, Niddrie, first, and Mr. McLennan, Restalrig House, second.

In addition to the nurserymen's exhibits already noticed, Messrs. R. B. Laird & Sons were first for hardy and greenhouse Rhododendrons, four Azalea indica, six Palms, three Crotons, and three Dracænas, Tree Ferns, and Coniferæ for table, besides table plants. Messrs. Ireland and Thomson were first for hardy Rhododendrons, twelve Conifers, and twelve forced plants; Mr. Bryson, Helensburgh, first for Auriculas and cut Roses.

Among the miscellaneous exhibits, Messrs. James Dickson & Sons, Hanover Street, contributed a table of decorative flowering plants, the Lawson Company a group of Japanese Maples in variety, Messrs. Ireland and Thomson a rich group of forced shrubs intermixed with ornamental Coniferæ, also a table of stove and greenhouse plants, including some nice Orchids, Azaleas, &c. From Messrs. T. Methven & Sons came an attractive group of Ivies, and a large table bright with a charming variety of forced and other flowering plants.

The attendance of the public was very large and the takings satisfactory.

CHRYSANTHEMUMS

NATIONAL CHRYSANTHEMUM SOCIETY.

May I, on behalf of the above Society, acknowledge the gentle reminder of a "Possible Exhibitor" that it is desirable the schedules of prizes for the ensuing season should be issued as early as possible? I am sure the executive is fully alive to this necessity, and will each of them be equally pleased with myself to know that its issue is being somewhat eagerly looked forward to by the Chrysanthemum world generally. Although the season is rapidly advancing, not a single day has been lost in its preparation, but so much other matter is now included with the schedule that of necessity its issue must be delayed until all, or nearly all, the returns are to hand. I think I may promise, however, that it will be distributed in the course of the present week, and if "Possible Exhibitor" will favour me with his address I will take care that a copy be sent him immediately after I receive them from the printer, and venture to hope the announcements therein will induce your correspondent to adopt for the future the *nom de plume* of "An Exhibitor."

I should be glad to take this opportunity of referring to an interesting schedule I have received by the last mail. It is for a Chrysanthemum Show to be held in Melbourne on the 25th and 26th of this month by the Victoria Horticultural Improvement Society. No less than forty-seven classes are announced for Chrysanthemums, and success I believe is assured. I am pleased to note that the offer of certificates of the N.C. Society takes a prominent position in the schedule, and will be awarded to the premier classes for specimen plants and cut blooms respectively.

The following is a paragraph from the annual report of this Australasian Society, and is sufficiently interesting to justify my asking your permission to quote:—"With a view to assimilating the working of this Society to those of the old country, letters were forwarded to the Royal Horticultural Society, the National Chrysanthemum Society, the National Rose Society, the Scottish Horticultural Association, and the Royal Caledonian Horticultural Society. The three first-named replied, forwarding their rules, reports, schedules, &c. Your Committee were so favourably impressed with the working of the National Chrysanthemum Society that they have taken steps to affiliate this Society with it."

I may also just state that I have lately received an intimation from the Secretary, Mr. J. Kirtland, that one of their Committee, as a representative, is on his way to England with letters of introduction to myself, and to confer on Chrysanthemum matters generally.—William Holmes, *Honorary Secretary, Frampton Park Nurseries, Hackney.*

BRISTOL BULB SHOW.

April 4th and 5th.

No Show was held last season, and it is to be hoped that the resuscitation will have been attended with better success than on former occasions. Although not so large the competition in many instances being anything but keen, there was yet an excellent display, and which was seen to the best advantage in the commodious Drill Hall where it was held. Much of the effect was due to the fine exhibit of 200 Hyacinths in pots by Messrs. Garaway & Co., Durdham Downs Nurseries, Clifton, and a grand bank of fine-foliaged and other plants shown by Messrs. Parker & Sons, nurserymen, St. Michael's Hill, Bristol. The best among the generally excellent Hyacinths shown by the Messrs. Garaway were Lord Derby, General Havelock, Laurens Koster, La Grandesse, Grandeur à Merveille, Koh-i-Noor, Queen of the Yellows, Prima Donna, Van Hooboken, Marchioness of Lorne, Primrose Perfection, Daylight, King of the Blues, and Heroine. From Mr. T. A. S. Dorrien Smith, Scilly Isles (Mr. G. D. Vallance, gardener), came grand Narcissus and Daffodil blooms, a very complete named selection being sent.

The competition with Hyacinths in pots was, on the whole, fairly good, and creditable collections of well known varieties were shown. Mr. T. W. Gibson was first for twenty-four Hyacinths in eighteen varieties, and Mr. H. Cruger Miles (Mr. F. Perry, gardener) second, both having fresh even plants. The best twelve varieties were staged by Mr. M. Dunlop (Mr. G. Marsh, gardener), and the same exhibitor was first for twelve Hyacinths in six distinct varieties, and Mr. W. K. Waite second. Mr. H. Cruger Miles had the best twelve single varieties of Hyacinths, while Mr. T. W. Gibson was first and Mr. J. Walls second for six varieties. The most successful exhibitors of Tulips were Messrs. M. Dunlop, T. W. Gibson, and H. Cruger Miles, while Messrs. Dunlop and W. K. Wait had the best pots of Polyanthus Narcissus, and Mr. J. Howes received a first prize for Amaryllis.

Two capital bank of flowering and fine-foliage plants were arranged, Mr. H. Cruger Miles being placed first, but was very closely pressed by J. Derham, Esq. (Mr. W. Rye, gardener). Orchids were very freely used, especially by the first named exhibitor, and both groups were very effectively and lightly arranged. Mr. J. Derham was well first for

six fine-foliaged plants, the second prize going to Mr. W. Dobson, and the third to Mr. H. St. Vincent Ames (Mr. W. Bannister, gardener). The last named was the most successful with specimen Ferns, Mr. J. Derham also having a good exhibit, and was second. Azaleas were poorly shown, the first prizes in two instanees being rightly withheld. The principal exhibitors of these were Messrs. H. C. Miles, J. Dole, and T. W. Gibson. Mr. J. Derham was first for four stove or greenhouse plants in flower, and Mr. H. C. Miles second. Table plants were well shown by H. St. V. Ames, who was first, and Mr. F. Tagart (Mr. E. Miller, gardener) was a good second. Mr. T. W. Gibson was well first for Roses in pots, and Mr. J. Dole second, and Mr. H. St. V. Ames had the best forced hardy plants. Mr. J. C. Wall (Mr. J. H. Vallance, gardener) was first for Lily of the Valley, and Mr. W. K. Wait second. Mr. J. Derham first for Primulas, and Mr. H. St. V. Ames second. Mr. H. C. Miles first for Cinerarias, and Mr. J. Dole second. Dr. W. C. Trotman first for Mignonette, and Mr. W. K. Wait second. Mr. J. C. Wall first for Gloxinas, and Mr. E. T. Hill second, and Mr. T. Tagart first for Violets in pots, and Mr. B. Hardwell second, the exhibits in each instance being highly creditable. Mr. T. Tagart was first for a specimen Orchid, and the best single flowering plant was shown by Mr. J. Derham.

With cut flowers, vases, wreaths, and bouquets the competition was much keener, and many of the exhibits were exceptionally good. Messrs. Perkins & Sons, Coventry, were most successful, being first for bouquets, with and without Orchids, and limited to 15 inches in diameter, for a wreath, and also for sprays for ladies and buttonhole bouquets, altogether a noteworthy achievement. Messrs. Garaway and Co. were also successful in these classes, their exhibits fully deserving the prizes awarded. Mr. C. Winstone, Clifton, was second for a bouquet, and Mr. M. Hookings was third in another class. The last named was first for a vase of choice flowers, and Mr. E. T. Hill second, the arrangement in each instance being light and tasteful. The best stand of twelve bunches of cut flowers came from Mr. H. C. Miles, choice Orchids being principally shown. Messrs. Cooling & Son, Bath, had a capital lot of cut Roses, and were placed first, the second prize going to Mr. T. W. Gibson.

The best collection of vegetables was shown by Mr. H. St. V. Ames, the Broccoli being particularly good, and Mr. E. T. Hill was second. Mr. J. C. Wall was first for a neat brace of Cucumbers, and Mr. M. Dunlop second, the first named also receiving an extra prize for Mushrooms. Mr. H. St. V. Ames was first for Apples, and Mr. E. T. Hill second, and with Pears Mr. J. Derham was first, and Mr. E. T. Hill second. Several lots of Grapes were shown, Mr. J. C. Wall being first for good Lady Downe's, and Mr. W. Iggulden, Frome, second with the same variety. The last named took the first prize for Strawberries with a fine dish of Vicomtesse Hericart de Thury; Captain Alcock (C. Saunders, gardener) being second with a good dish of Princess of Prussia.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Asparagus from Seed.—Asparagus seed can be purchased very cheaply, as it germinates freely, and half an ounce or 1 oz. will produce hundreds of roots. Early in April is a good time for sowing. In many cases it is sown in what may be termed a nursery bed, the roots being kept there for a year or two and then transplanted to their permanent quarters. Good plantations have been secured in this way. We have practised it often, but if a good bed is desired quickly the seed should be sown in the position the plants are to occupy. If only a bed is wanted select a good position, add a quantity of sand and manure to the soil, fork it well in, and then open drills 1 foot apart. Do not sow the seed all along them, but drop a few seeds in at a distance of 1 foot apart and cover them. Several young plants may appear; allow three or four of them to remain, and if undisturbed many good "sticks" may be cut from them the third year. Large plantations may be formed in the same way, but the rows may be kept 18 inches apart in their case, and if the ground appears vacant between the rows when the plants are seen, a row of Spinach or Lettuces may be had between the rows of Asparagus.

Transplanting Asparagus.—Roots of all ages may be transplanted. If an old bed is very thin of roots, lift the whole and plant again close together. They will not bear so well the first year after shifting as they might do if left alone in the old place, but they will soon recover from the transplanting. Where young roots are close together in the seed beds lift them carefully and fill blanks in old beds or form new ones. They all delight in a rich open well-drained soil. Let the roots extend when placed in the ground without being twisted or cramped, and if planted 3 inches below the surface they will do well. We always transplant our Asparagus during moist weather, as a dry atmosphere checks the growth severely, and the sooner they are replanted after being taken up the better.

Stimulants for Asparagus.—The desire always is to have Asparagus as large as possible, and everything is given to them that is likely to increase the size of the heads. Where the plantations are large it is impossible to give them all liquid manure, but where the bed is only a small one liquid manure may be applied at this season with advantage. Guano water, soot water, and water from the cowshed or stable are all suitable, and if a little guano, salt, soot, or artificial manure is sprinkled round the crowns when it is raining the roots and stems will soon show the benefit. It is better to give them a little once a week for the next six weeks than to overdress them at once.

New Seakale Plantations.—Seed may be sown in the same way as advised for Asparagus, but it is only beginners in its culture that need to sow seed, as all who possess any plants can increase it and form new plantations more quickly than by seed-sowing. If the roots have been lifted and forced take them from the pots, boxes, or beds in which they are stored, cut each crown with a piece of root 3 inches long attached, and the remainder of the root may be cut into similar lengths. Keep all the roots with crowns attached together, and plant them in rows 2 feet apart and 15 inches between the plants. Give them rich deep soil, and merely leave the crown visible above the surface. These will bear a crop of Kale next spring, and if the roots that were cut into lengths are planted in the same way, but with 18 inches from row to row, and 1 foot from set to set, they will form excellent plants eighteen months hence. This is a good way of securing young healthy plants for a new Seakale plantation; Seakale which has been covered for forcing should now be exposed.

Increasing Rhubarb.—This can be raised from seed, also roots may be divided and replanted. This is our favourite way of increasing Rhubarb. When the stools are very large they are cut down the middle with a spade. One part is allowed to remain undisturbed, but the other is lifted out of the ground and divided into two or three pieces, and each of these is planted. For a little while at first these will not grow so strongly as the part allowed to remain in the ground, but by the autumn they will be as strong as if they had never been disturbed, and a good new plantation may be secured in one year in this way.

Jerusalem Artichokes.—These should be grown in every garden, as they are most useful in winter. When once they are introduced they readily take care of themselves; they are almost as difficult to eradicate as Horseradish. If allowed to grow for a year or two they become such a mass that the tubers do not gain any size, but they should be lifted every spring, a few of the best selected for planting again and the others kept in hand for use. Just now is the time to plant them. Keep the rows 2 feet apart, and 15 inches from tuber to tuber will allow the crop to develope freely. We have planted our Jerusalem Artichokes on the same ground for ten years, and they are as fine now as in the first season.

Globe Artichokes.—Globe Artichokes are more tender and more difficult to cook, but as much valued by some, though not cared for by others. They are, however, a high-class vegetable, and every professional gardener ought to grow them. They may be raised from seed sown in the open, and they are easily increased by dividing the plants. This should be done in April, and established plants should have the manure or protectors removed from their stems and a quantity of good manure forked in near their roots before they have advanced in growth to any extent.

FRUIT FORCING.

Figs.—*Earliest Forced Trees in Pots.*—Early Violet and Early Prolific, though small, are desirable from affording fruit in advance of the large-fruited varieties. The fruit showing signs of ripening, watering must be gradually reduced and syringing must cease, but those swelling the fruit should be assisted with liquid manure twice a week, syringing the trees at closing time. A circulation of warm rather dry air should be secured when the fruit is ripening. A temperature of 60° to 65° at night, 70° to 75° by day, advancing to 80° or 85° from sun heat, is suitable.

Early Forced Planted-out Trees.—No other fruit tree produces surface roots so abundantly as the Fig, if measures be taken to encourage them by means of a mulch 3 or 4 inches thick of partially decayed manure given when the trees are fairly in growth. This, if kept in a moist state, will be full of active feeders by the time the trees need the most assistance in order to perfect the crop. Trees in borders of limited extent should be well supplied with water or liquid manure as necessary. Syringe twice a day. Ventilate freely in favourable weather, which will secure stout growth and leathery healthy foliage. No fruit is more benefited by the full rays of the sun than the Fig. Any kind of shading, whether by other plants or too much of their own foliage, is injurious and must be strictly guarded against by pinching out the young growths in the later houses and thinning out all the overcrowded shoots. The temperature should be maintained at 60° to 65° at night, 70° to 75° by day, advancing to 80° to 85° from sun heat.

Succession Houses.—Proceed with tying-in, thinning and regulating the terminal shoots, stopping the spurs at the fourth or fifth leaf, and the laterals from these at the first or second leaf. Mulch the borders with short manure if not already done. Maintain the night temperature at 55° to 60° at night, 65° by day artificially, 70° to 75° from sun heat, which ought not to be exceeded without full ventilation, as it is very important the growth be stout and the foliage have good substance. When the trees are in full leaf the night temperature should be maintained at 60° to 65°, and 70° by day, allowing it to rise to 80° or 85° from sun heat.

Unheated Houses.—The trees must now have the protection removed, eventually pruning the trees, thinning the least fruitful growths and the

old and bare, avoiding overcrowding, as it is a common error in Fig culture, particularly in late houses in which the trees cannot have too much light. Allow the shoots for bearing to grow somewhat loosely with their points up to the light. Stopping must play an important part in cool houses. Pinch at the third or fourth joint on the young wood, which will assist the swelling of the fruit and induce the trees to break and produce short-jointed wood from the base of those shoots in bearing. Ventilate freely at and above 50°, advancing to 65° from sun heat. The border should have a thorough watering if dry, repeating as necessary to bring it into a thoroughly moist state, afterwards mulch with short manure.

PEACHES AND NECTARINES.—*Earliest Forced House.*—Continue syringing until the fruit commences to soften, as it will do during the late stages of ripening, and if syringing is persisted in it will cause the fruit to crack in the skin, and if only slightly it will give the fruit a very unpleasant mouldy flavour. It is very important therefore to have the trees quite clean by the time the syringing ceases, as it must when the fruit commences ripening. If there be the least trace of red spider apply an insecticide, repeating it so as to thoroughly free the trees of the pest. It is only the very early varieties that will be ripening, the others must be well syringed and have abundant supplies of water with good surface mulchings. Raise the fruits with the apex to the light, shortening or drawing the leaves aside so as to let the fruit have the full benefit of the light for colouring.

Second Early Forced House.—Trees started at the new year are not so advanced as usual, being much retarded by the prolonged cold. They are now stoning, and will need care in preventing checks from sudden fluctuation or depression of temperature, the night temperature being kept steady at 60° at night with 5° more on mild nights, whilst on cold nights it may fall to 55° in the morning, 65° by day artificially in dull weather, 70° to 75° on cloudy days, but with clear intervals, ventilating from 70° and freely above 75°. Attend to tying in the growths as they advance, and encourage no more than will be required for future bearing, the extension of the trees, and for the swelling of the current crop. See that there is no lack of moisture in the borders, affording liquid manure if the trees are heavily cropped and not making satisfactory growth, but avoid undue excitement to trees in full vigour, as any impulse given to growth during the stoning is apt to affect the process disastrously. Syringe twice a day, so as to keep the foliage clean.

Trees Started in February.—These have set too much fruit. When the fruits are the size of horse beans thin them well, removing the smallest and those on the under side of the shoots, leaving sufficient for the crop, those that are best situated for receiving air and light. Disbudding must not be neglected, and heeling-in the shoots required for next year's bearing can be carefully attended. Syringe twice a day, the second syringing at closing time or early in the afternoon, so as to have the foliage fairly dry before night, increasing the temperature to 55° or 60° at night, 60° to 65° by day, ventilating from the latter, and increasing it with the sun heat to 70° or 75°.

Trees Started in March.—Too many fruits are set in most cases, and where they have not it may be traced to over-luxuriance or to immaturity of wood and imperfect development of buds. An over-set is a source of great weakness, and not infrequently causes the incipient fruit to be cast in showers, leaving but a scant crop. There is no remedy but to well thin the flowers before they expand, not to disbud in quantity but gradually, and to thin the fruit so soon as it can be seen which is taking the lead. Syringe so as to assist the fruit in throwing off the remains of the blossom, and ventilate freely so as to insure stout thoroughly solidified growth. A temperature of 50° to 55° will be sufficient, not allowing an advance above 65° without free ventilation.

Late Houses.—Attend to fertilising the flowers. There ought not to be anything neglected that is likely to insure the perfect fertilisation of the blossom, as without it the fruit cannot attain perfection. Split stones and disaster in stoning are in a measure due to neglect of attention at flowering. Secure a temperature of 50° by day and ventilate freely, allowing an advance to 65° from sun heat. Leave a little air on constantly. As there is a superabundance of blossom thin it well—we have removed fully half this year in all the houses—all those on the under side of the trellis, and as there are some with half a dozen blossoms at a joint, and very many triple buds, all bloom, the necessity for thinning the blossom is great.

In unheated houses observe 50° as the point for admitting air, and 65° as a maximum from sun heat without full ventilation, but there must be no advance above it without a thorough circulation of air. There must be no deficiency of moisture at the roots.

PLANT HOUSES.

Cytisus.—Plants that have flowered should be cut back closely and returned to the greenhouse. It is a mistake to place them in heat for the purpose of inducing fresh growth. If they have been in a moderately warm structure while in flower, they should be placed for ten days or a fortnight after being pruned in the warmest portion of the greenhouse until they can be gradually hardened to cool treatment. They start into strong growth under these conditions, and are ready when genial weather arrives for placing in their summer quarters outside. The plants should stand upon some moisture-holding material, and be syringed once or twice daily according to the weather. When they have broken into growth they can be repotted if they need more root room. A suitable compost for them is good fibry loam, one-seventh of decayed manure, and a liberal addition of silver sand. Small shifts only are desirable, and the soil should be pressed firmly into the pots. Apply water carefully until the roots are in full activity, when liberal supplies may be given.

Staphylea colchica.—Prune plants closely that have ceased flowering, or they will become bare at the base and lose their effectiveness for decorative purposes. When cut back and started, either in the greenhouse or cold frames, they make strong growths about 9 inches or 1 foot in length. These if well ripened by placing the plants in a sunny position outside after the weather is favourable will flower as well as imported plants. If the plants require more root room they may be potted directly they have broken into growth in the same compost as advised above. To increase the stock young plants can be raised by striking the growing shoots that are removed in pruning. These strike freely in the propagating frame in heat.

Liliums.—Plants of L. longiflorum and its variety Harrisi that have been flowered early for some years will now be developing their blooms. Be careful not to hurry them in this stage, or the flowers when they expand will be small and devoid of substance. Those that are only just forming their flowers must be carefully treated in this respect, or they will turn yellow and fall prematurely. Be careful never to allow them to become dry at the roots, at the same time the soil should not be saturated, for one evil is as bad as the other. The earliest of the old favourite L. candidum are developing their flower buds rapidly. Watch for aphides, which attack them at this stage of growth and soon mine the plants if not destroyed. The varieties of lancifolium that are required to flower as late as possible should be plunged in cold frames and abundance of air given whenever the weather will allow of this being done.

Roses.—Hybrid Perpetuals that have flowered should be placed in a cool structure until they are thoroughly hardened and the weather is sufficiently genial for placing them outside. Tea varieties if placed in a similar structure will practically rest for a time and then break again strongly into growth and produce better flowers than have been cut from them. It is surprising with what strength they start after they have enjoyed a slight rest in a cool structure.

THE BEE-KEEPER.

NOTES ON BEES.

THE CONSUMPTION OF STORES.

NOT only has this been excessive with my own strong stocks, but it appears to be general throughout the country. Both from correspondents at a distance, and verbal information from neighbours, the result is the same. Stocks have come back in weight as much as 30 lbs., and are on the point of starvation; nay, many record that they have discovered some dying, and but for aid in feeding would have been dead. In my own case, the only one that I have assisted is the nucleus of bees wintered on one comb, to which I have given a small super of sealed honey, heated well through before placing it over the cluster of bees. All the others being extra well supplied in autumn with honey, I feel quite at ease regarding their safety, as the 50 lbs., at least, of honey left with them in autumn cannot be consumed as yet. Nevertheless, as soon as the air becomes milder I shall feed all those having less than 12 lbs. of honey, and advise all bee-keepers to examine them on the first favourable opportunity, feeding all those having less than 12 lbs. of honey in store. It is better to ascertain their wants by weighing than opening the hives, preventing thereby the consequent cooling and attempt to rob by other bees. The only hives I have opened, or intend to until summer, are several very far advanced Syrians, and this examination took place early in February. Cold as the present spring has been, it is no exception to the rule that January is a safer month to manipulate, and to feed if required, than later on.

I should very much like to hear from those youthful bee-keepers who manage their hives on the brood-spreading and stimulating principle according to the printed directions in their guide. In a season like the present the slightest molestation of bees is very detrimental with hives in a normal state; when otherwise inspection should never be delayed.

The state of my apiary at the present is as follows: All are in full sized hives which admit of the internal economy of the hive being carried on without interruption, although there are 60 lbs. of honey. One half of my stocks are not only in full

sized hives, but are in full strength, capable of carrying in from 5 to 10 lbs. per day whenever the Gooseberries are in flower, which time cannot be far distant if the average of years is taken. It is quite common for bees at a distance of from three to four miles from here to increase in weight 40 to 50 lbs. in a week's time, from the Gooseberries alone.

Should the weather be favourable during April when the Gooseberries are in bloom, these forward stocks will carry in as much honey as will tide them over the greater part of the season, and be in the best condition for storing surplus honey from the White Clover. If they miss the Gooseberries, which they often do, then feeding heavily will be resorted to, and may turn out the least profitable half of my stock on that account. My other stocks, composed wholly of nuclei last autumn, are advancing steadily, although not so rapidly as the stronger stocks, but will not suffer to the same extent as the latter should the weather be unpropitious during April and May. Owing to this fact, and no expense necessary in feeding, they will be forward for the ingathering in June, which will make them the most profitable portion of my stocks.

It is a great mistake to suppose that bees should be manipulated or have a different position during the spring months from what they had during winter, and yet this is taught daily. The hive that is properly prepared in autumn so as to defend the bees from the rigours of an Arctic winter, and having a young and fertile queen, all proving successful, require no other attention or alteration, because the bees will begin to breed at their own time, and continue in a more regular and continuous manner with less loss of bees than when brood nests are contracted, brood spread, seals of honeycomb broken, or stimulative feeding practised.—A Lanarkshire Bee-keeper.

INTRODUCTION OF FERTILE QUEENS.

It was with the greatest pleasure and profit I read the truly scientific article by T. Bonner Chambers, Esq., F.L.S., page 247. His theories at once placed several matters I could hardly previously explain in a clear light. He speaks of what I have always referred to as "instinct," as "habit" or "custom," by which he leads us to first inquire what is the habit or custom of bees when placed in certain circumstances, and thus leads us to arrive at a correct theory.

Two distinct theories are propounded. First, that it is the invariable habit or custom of bees when they lose their queen to rear a successor from the egg or larvæ, and that being so, it is not natural, while in possession of such egg or larvæ, to receive a strange queen. This I very well know, though I never conceived it as a theory, nor should I ever have been able to put it in such clear or terse language as he does. For years I have tried experiments, introducing queens by means of cages; and though it has been asserted that old bees, or those long queenless, will not accept a strange queen under any circumstances, yet when offered under the conditions of my law she is invariably accepted. Strange to say, if instead of being dropped in amongst the bees she is caged on a comb in the midst of them for forty-eight hours, and the bees are old or have long been queenless, she will be at once balled when liberated and soon killed if not released. My experiments were directed to find out why this was so. I soon, however, found (I used the wire-mesh pipe-cover cage) that when I caged a Syrian queen amongst the old black native bees for six or eight days that one or more queen cells would be started, though no queen had been at liberty in the hive, nor was there any suspicion or possibility of any being in previous to the queen being caged. After they were sealed I removed the queen, when to my surprise Syrian queens hatched from them, thus proving conclusively that the egg or eggs had been dropped by the queen in the cage and carried by the bees to a cell to be developed. Had the queen laid them in the cells under the cage the bees could not have reached them. Thus it will be seen it was quite possible for them to procure the egg within the first forty-eight hours, or even twenty-four; and to be sure of finding it in one of the numerous cells, would require more patience than ever Job possessed. These queen cells have, I believe, been seen by others, but have always been treated by them as the produce of fertile workers; hence these were dubbed the "bee-keeper's pests," as no hive could be re-queened with them in, though as a matter of fact I have never found fertile workers to make any difference. It will be seen all these matters are made clear by the "Bonner Chambers" theory.

"A Lanarkshire Bee-keeper" has several times spoken of his safety cage, which fits on the top of the frames. I have an idea that its safety depends on the impossibility of any egg dropping out of the bottom, and not, as supposed, because the queen is safe from angry bees. If our friend, "A Lanarkshire Bee-keeper," will make his cage bottom of double wire cloth, pretty coarse so that eggs can drop through, and set it over a frame space, I venture to assert its safety will disappear. You see in his plan, as stated on pages 204-5, the bees have no means of rearing a successor, and not having been able to get an egg during the time the queen is caged they are exactly in the condition required by my law for safe introduction.

Mr. Bonner Chambers' second theory is, that when a queen leaves a comb before she has deposited an egg in each empty cell, the bees either think she is faulty or lost, and so begin constructing queen cells. Whether he is correct in this or not the future will decide, but in justice I must say this, that many times I have found queen cells that I could not account for, and I have grown so used to seeing them that I never conclude the queen is lost by their presence. Only as recently as Saturday, March 24th last, I found a sealed queen cell in a very strong stock; the reigning queen was laying, and seemed all right. As this cell excited my interest very much I carefully examined it and, from what I could make out, the queen previous to the last cold spell had deposited some eggs in the comb, and from some cause had left that comb for another one, as the sealed brood was very irregular. Then the cold coming the bees had contracted themselves from the comb ends, and being no passage through the combs, which have 1 square foot of surface, they might have been practically divided and so thought themselves queenless; or they might have started the cell solely because the eggs were in broken order. The cell in question had only just been sealed, as the queen had not changed from a larva to a nymph. I shall do my utmost to investigate this most important matter; from it we may learn why queens are so often superseded, and till it is firmly settled bee-keepers had better handle their brood combs as little as possible, as disturbing the queen will probably result in her being replaced by a daughter. I am sure all bee-keepers are under a deep obligation to Mr. Bonner Chambers for such an able article.—A Hallamshire Bee-keeper.

TRADE CATALOGUES RECEIVED.

Webb & Brand, Saffron Walden.—*Catalogue of Hollyhocks.*
Thomas Painter, Smallwood, Stoke-on-Trent.—*Catalogue of Dahlias.*

TO CORRESPONDENTS

*** All correspondence should be directed either to "The Editor" or to "The Publisher." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Books (*E. W.*).—Perhaps the Rev. T. C. Bréhaut's work on modern pruning, published by Messrs. Longmans, might be useful to you. It can be obtained, if in print, through a bookseller.

Strawberry Plants (*H. P. W.*).—Possibly the plants may fruit in the autumn if they have proper cultural treatment, and the variety is Viscomtesse Hericart de Thury or Garibaldi.

Wood Ashes and Bones (*G. J. S.*).—The bones are some months dissolving in wood ashes, the time depending on the size of the bones and the moisture of the ashes. The smaller the bones are broken the sooner they are softened, and the ashes must be constantly moist.

Peaches Setting (*S. T. C.*).—We have received the sample, which is as good as could be desired, but cannot insert your letter this week. We have observed that persons who particularly desire their letters to appear in the "next issue" are the latest in sending them, and thus defeat their object.

Heating (*J. R. G.*).—The boiler to which you refer is no doubt good when coke is largely or exclusively used as fuel, but if coal is used alone, or mainly, it is apt to "cake" in boilers of that type, steady and regular combustion not being assured except by frequent attention. There may be exceptions, but that is the rule.

Strawberries (*Temple*).—We suspect the atmosphere has been kept fully too moist, and perhaps the days were dull when the plants were flowering. The air should be dry enough for the liberation of the pollen, and it is a good plan to draw the hand lightly over the trusses, or rather draw them lightly through the hand, during the forenoon, for aiding its dispersion.

Scale on Pear Trees (*W. S.*).—The spurs are seriously infested with the oyster scale, Aspidiotus ostreæformis. It may be destroyed by applying methylated spirits well rubbed into every fissure with a brush, also by petroleum, but it is desirable to keep it from the buds. If you dissolve 4 ozs. of softsoap in a gallon of boiling water, stirring well in while hot a quart of petroleum, and apply this with a brush, it will destroy the scale. It is well to keep stirring the mixture as the application proceeds.

Strawberries—Vines (*F. C.*).—If the house is very light indeed the Strawberries would succeed either planted out or with the pots plunged in a moist medium, care being taken that the roots are not in the least dry when the work is done. We have seen heavy crops produced with the pots plunged, also when the plants have been turned out of them into good soil. Both methods are adopted where Strawberries are grown for market in very light pits. If your house is light enough, the plants, if good and well managed, will produce good crops of fruit. We are by no means certain you have done right in respect to the Vine border. Point the lime lightly in, make the border moderately firm, give a dressing of Thomson's Vine manure, and mulch to prevent the surface drying excessively, this causing the roots to go downwards, and often into ungenial soil. The condition of the Vines and the nature of the border have to be considered in the application of manure. If the border is inside the house examine it, not on the surface only, and if in the least dry apply sufficient tepid water for rendering it moist before applying manure or mulching.

Consumption of Fuel (*J. H. S.*).—The coal consumed in your garden during the past year appears at first sight to be very large; but after making a careful comparison of the fuel consumed in another garden, where economy has been exercised and the most approved systems of heating adopted, the quantity, as you will see, does not seem to be excessive. Coal, however good it may be, is not the most economical fuel that can be used for garden furnaces: for, however well the stoking may be done, there is a great loss by the escape of unconsumed gases, and this must take place to a very large extent at night after the fires are banked. According to various experiments this loss, in the ordinary methods of burning coal, amounts to 38 per cent., therefore 62 tons of oven coke would evolve as much heat as 100 tons of good average coal. Gas coke is considered 12½ per cent. inferior to this; therefore 74½ tons would be equal to the same quantity of coal (100 tons). This, then, puts a different aspect on the quantity of coal consumed in your garden. The 257 tons used would prove little if any better than 159 tons of oven coke, or nearly 192 tons of gas coke. This appears to be fully borne out by practical experience. In the garden to which referenee has been made best steam nutts were used foi fuel during the years 1878 to 1882 inclusive, and the average eost per year was £189 5s. 1d. During the years 1883 to 1886 inclusive the average eost for gas eoke per year was £113 1s. 3d. The average quantity consumed during those years was 198 tons 9 cwts. and 2 qrs. The highest year was £124 18s. 10d.; quantity consumed, 210 tons, 5 cwts. 0 qrs. The lowest year was £99 9s. 5d.; consumed, 183 tons 11 cwts. 0 qrs. If we take the highest cost of the previous dates, when nutts were used, we at once see a striking difference—namely, £212 0s. 5d., while the lowest was £164 12s. 9d. The difference is great, but it goes to show that the figures given above have foundation in fact. There was no falling off in the quantity of heat during the years coke was consumed; on the eontrary, the temperatures on the whole were higher, and maintained with greater certainty, with an additional house heated to a stove temperature during that period. The quantity of piping heated is 6500 feet, against 4780 in your ease. Three boilers in each case were used; hut in the one we have taken for comparison less fuel is consumed than is the ease with you. This is readily accounted for. One of the boilers, a gold medal, heats 1500 feet of piping, for which two boilers—common saddles with brick flues—were formerly employed. The temperature of the house was raised 5° during the whole of the winter months, and the boiler now in use does its work with fully one-third less fuel. The other two boilers in use are set side by side, and work separately or conjointly as required. They are said to be capable of heating 20,000 feet of 4-inch piping. These are saddles, with ten 5-inch tubes running through each, which confines all the heat within the boilers; in fact, the smoke as well as the heat, after striking the back of the boiler, must travel through the lower five tubes to the front, and again through the top layer before an escape to the chimney can be effected. You appear to have plenty of boiler power—if the boilers are what we presume them to be—but if they are the old saddles with brick flues they are not the most eeonomical that ean be used, and their power is deficient. Too few pipes in any of the houses, which would entail overheating to keep the desired temperature, is the reverse of eeonomy. But without doubt the lower temperature to whieh you are subjected during winter and spring would alone aeeount for greater consumption of fuel than is the ease in the garden we have selected for comparison. You may not be fully aware how the external temperature affects the quantity of fuel consumed. To give an example, we will take the quarter ending March, 1883, and the consumption amounted to 71 tons 16 cwts. Again, the same quarter in 1886 the consumption was only 1 ton 1 cwt. less; while only 41 tons 1 ewt. was consumed during the same quarter of 1885; and the previous year was correspondingly low. To further show the effect of the external temperature, two quarters ending December may be noted. In 1884, 66 tons odd was used, while in 1886 only 49 tons odd. Your boilers appear to be exceptioually high and wide, and therefore we conclude they are not the common saddle boilers, but saddles with a number of tubes through them, and in addition flues at the sides the same as is necessary in setting the old saddle forms. These are good boilers, but not so economical as boilers in which all the heat is confined and exhausted before it can make any escape.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*J. H. W.*).—The plant is a strong form of Aloe ciliaris. We shall be pleased to name the others for you, but it would be an advantage if you sent several together, and well-developed leaves would be sufficient with the most distinct.

COVENT GARDEN MARKET.—April 11th.

Business improving. Prices steady. Some new Grapes to hand, but unsaleable against good samples of old ones.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve	2 6	to 4 6	Oranges, per 100	2 0	to 5 0
Nova Scotia and Canada barrel	10 0	18 0	Pears, dozen	3 0	6 0
Cobs, 100 lbs.	45 0	0 0	Pine Apples, English, per lb.	0 0	0 0
Grapes, per lb.	3 6	6 0	St. Michael Pines, each	3 0	5 0
Lemons, case	10 0	15 0	Strawberries, per lb.	6 0	0 10

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, dozen	1 0	to 2 0	Lettuce, dozen	0 9	to 1 3
Asparagus, bundle	8 0	0 0	Mushrooms, punnet	0 6	1 0
Beans, Kidney, per lb.	1 6	0 0	Mustard and Cress, punt.	0 2	0 0
Beet, Red, dozen	1 0	2 0	Onions, bunch	0 3	0 0
Broccoli, bundle	0 0	0 0	Parsley, dozen bunches	2 0	3 0
Brussels Sprouts, ½ sieve	3 6	4 0	Parsnips, dozen	1 0	0 0
Cabbage, dozen	1 6	0 0	Potatoes, per cwt.	4 0	5 0
Capsicums, per 100	1 6	2 0	,, Kidney, per cwt.	4 0	0 0
Carrots, bunch	0 4	0 0	Rhubarb, bundle	0 2	0 0
Cauliflowers, dozen	3 0	4 0	Salsafy, bundle	1 0	1 6
Celery, bundle	1 6	2 0	Scorzonere, bundle	1 6	0 0
Coleworts, doz. bunches	2 0	4 0	Seakale, basket	1 3	1 9
Cucumbers, each	0 4	0 7	Shallots, per lb.	0 3	0 0
Endive, dozen	1 0	2 0	Spinach, bushel	1 6	2 0
Herbs, bunch	0 2	0 0	Tomatoes, per lb.	1 0	1 6
Leeks, bunch	0 3	0 4	Turnips, bunch	0 4	0 6

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, dozen	6 0	to 12 0	Fuchsia, dozen	0 0	to 0 0
Arum Lilies, dozen	9 0	15 0	Genista, per dozen	6 0	12 0
Arbor vitæ (golden) dozen	6 0	9 0	Hyacinths, dozen	5 0	10 0
Azalea, dozen	24 0	42 0	Hydrangea, dozen	0 0	0 0
Cineraria, dozen	6 0	10 0	Lilies Valley, dozen	18 0	24 0
Cyclamen, dozen	12 0	24 0	Lilium lancifolium, doz.	0 0	0 0
Dielytre, per dozen	12 0	18 0	Marguerite Daisy, dozen	9 0	12 0
Deutzia, per dozen	6 0	9 0	Myrtles, dozen	6 0	12 0
Dracæna terminalis, doz.	30 0	60 0	Narciss, per dozen	8 0	10 0
,, viridis, dozen	12 0	24 0	Palms, in var., each	2 6	21 0
Erica, various, dozen	9 0	18 0	Pelargoniums, dozen	12 0	18 0
,, ventricosa	18 0	24 0	,, scarlet, doz.	6 0	9 0
Euonymus, in var., dozen	6 0	18 0	Poinsettia, dozen	0 0	0 0
Evergreens, in var., dozen	6 0	24 0	Solanum, dozen	9 0	12 0
Ferns, in variety, dozen	4 0	18 0	Spirea japonica, doz.	9 0	15 0
Ficus elastica, each	1 6	7 0	Tulips, dozen pots	6 0	9 0
Foliage Plants, var., each	2 0	10 0			

CUT FLOWERS.

	s. d.	s d.		s. d.	s. d.
Abutilons, 12 bunches	3 0	to 6 0	Lily of the Valley, 12 sprays	0 6	to 1 0
Anemone (Fulgens), 2 bunches	3 0	6 0	Marguerites, 12 bunches	2 0	6 0
Anemones (French), 12 bunches	1 6	4 0	Mignonette, 12 bunches	3 0	6 0
Arum Lilies, 12 blooms	4 0	6 0	Narciss, white (French) 12 bunches	3 0	6 0
Azalea, 12 sprays	0 6	1 0	Narciss, various, 12 bchs	3 0	6 0
Bouvardias, bunch	0 6	1 0	Pelargoniums, 12 trusses	1 0	1 6
Camellias, 12 blooms	1 0	4 0	,, scarlet, 12 trusses	0 6	0 9
Carnations, 12 blooms	1 0	3 0	Primroses, 12 bunches	0 9	1 0
Chrysanthemums, 12 bchs.	0 0	0 0	Primula (single), bunch	0 4	0 6
,, 12 blooms	0 0	0 0	,, (double), bunch	0 9	1 6
Cyclamen, 12 blooms	0 6	1 0	Roses, Red, 12 blooms	2 0	6 0
Daffodils, Double, 12 bchs	3 0	6 0	,, (indoor), dozen	3 0	4 0
,, Single, 12 bchs	3 0	9 0	,, Tea, dozen	1 6	4 0
Daisies, 12 bunches	2 0	4 0	,, red, dozen (French)	1 6	3 0
Epiphyllum, 12 blooms	0 4	0 6	,, yellow	3 0	6 0
Eucharis, dozen	4 0	6 0	Snowdrops, 12 bunches	1 0	3 0
Gardenias, 12 blooms	3 0	6 0	Spiræa, bunch	0 6	1 0
Hyacinths, French, 12 bunches	1 0	2 0	Stephanotis, 12 sprays	8 0	9 0
Lapageria, coloured, 12 blooms	1 0	1 6	Tropæolum, 12 bunches	2 0	3 0
Lilium longiflorum, 12 blooms	4 0	6 0	Tuberoses, 12 blooms	1 6	2 0
Lilies, White, 12 bunches	0 0	0 0	Tulips, dozen blooms	0 6	1 0
,, Orange, 12 bunches	0 0	0 0	Violets, 12 bunches	1 0	1 0
			,, (French), bunch	1 6	2 0
			,, (Parme), bunch	2 0	3 0
			White Lilac, per bunch	5 0	6 0



ROOT CROPS.

Mangolds, Kohl Rabi, Swedes, and White Turnips are the root crops which are found upon most farms, and in addition to them Carrots and Parsnips are occasionally grown, but as the two latter crops are only used for horses and cows as an addition to the ordinary dietary they need not be taken into account for general purposes. Potatoes, too, are undoubtedly a profitable crop to grow for sale if the market be within a moderate distance of the farm, or where special facilities for speedy and cheap carriage exist, and on farms where there is a systematic process of cooking food for cattle or pigs Potatoes are very useful, but they should never be used uncooked, as our correspondents occasionally suggest.

The serious failure of many such crops from drought last year will probably lead to some curtailment of the space generally allotted them, and to improved culture. This certainly will be a step in the right direction, for we hardly need contend that if it is worth while growing roots at all it certainly answers to afford them the highest possible cultivation, and an acre of really fine roots is much more satisfactory and profitable than half a dozen acres of starveling roots. Repeatedly have we seen failures with Mangolds solely owing to a want of manure. To make a deep furrow or drill along which a very little farmyard manure is scattered—not enough, in fact, to cover the bottom, as we have often seen—to turn back the soil and sow the seed, is very poor practice indeed. The seedlings invariably come up puny and weak, and under the most favourable conditions of weather the crop is a poor one ; but if drought sets in it is practically a failure. Such unsatisfactory results are so clearly a foregone conclusion that it is matter for wonder how anyone can allow himself to make such a deliberate bid for failure, and it is done repeatedly. Far better would it be to leave half of the land uncropped, and to cultivate the other half thoroughly.

Excellent crops of Mangolds may be grown without farmyard manure, but we prefer using it in combination with chemical manure, because, as we have so frequently explained, it contains so much moisture that once established in it the young plants are practically unaffected by drought. With the rows about 2 feet apart thirty cartloads of muck per acre spread thickly along the furrows is not too much, and before turning back the soil over the muck apply the Norfolk dressing of 3 cwt. of common salt and 1 cwt. nitrate of soda by scattering it upon the muck and soil. This dressing should suffice to produce an excellent crop of roots, and we hardly think the application of a second hundredweight per acre after the singling of the plants desirable, because the effect of this supplementary dressing must be speculative except in a wet summer. All things considered, we prefer our application of manures to be done as we have shown before the sowing, so as to have the soil well stored with fertility for the plant, and we certainly cannot suppose there is any risk of a loss of nitrogen before the roots are in full activity in the soil. We like to get this out of hand, and the singling and hoeing done as far as possible before haymaking begins. Sown now the plant is certain to be forward enough for our purpose, but land that is foul with roots and seeds of weeds will require the repeated use of both horse and hand hoes. Especial care must be taken to have the hand hoes going as soon as weeds are visible, for we have seen Charlock so rampant among Mangolds that it had to be pulled out by hand.

In Swede culture we prefer the Norfolk custom of sowing Swedes as soon as the land can be prepared after the Mangold sowing is done. Some roots may be spoilt by mildew, just as some of the Mangolds bolt to seed from early sowing, but the per-centage of waste from such blemishes will be small, and there will be an ample amount of compensation in the superior bulk of the remainder of the crop. We may mention by the way that the bolting of Mangolds to seed may arise from seed saved from such "bolters," for which reason we prefer having our seed from a reliable source, even if we do pay a little more for it. The sowing of Swedes as a successional crop in alternate breadths with White Turnips often answers very well, and the plan has the additional merit of a variety of wholesome if not very nutritious food. A crop of late-sown White Turnips is always useful at this season of the year for the lambs. We have now a flock of ewes and lambs upon a piece of small but very sound roots altogether preferable to large tough woolly roots.

A certain breadth of Kohl Rabi is of especial value for autumn folding of land left under half-fallow. We saw excellent crops of it last year where Swedes were practically a failure, and it may be regarded as decidedly a more certain crop than Swedes. It requires very much the same cultural process as Mangolds, and the same manure, of which it is certainly worthy.

WORK ON THE HOME FARM.

April has brought with it the much-desired change of weather, and the corn drills have been kept going daily for the past week, and the Barley sowing will soon be over. All that we wanted was a few inches of the surface dry enough for drilling in the seed, and we gave orders that no deep stirring of the soil with duckfoot harrows, horse hoes, or cultivators should be done before the sowing, for every day is precious now, and the seed on the whole has been sown very well. Germination and growth will follow so quickly that we must be on the alert to get as forward as possible with all work on the land before the hoes are required for the corn. The Excelsior drills prove of especial service now, sowing the corn, manure and small seeds at one and the same time. This is certainly one of the best labour-saving appliances we have tried. It is light, yet very strong, and so simple in construction that we have really had no difficulty in getting our horsemen to understand and manage them at once. There are dial plates with indications by which the quantity of seed and manure sown is regulated to a nicety, and the land measurer attached to the drill shows the number of acres sown daily. We have long deplored the cost of drilling under the old system, which required three horses, two men, and a boy, but with new drill one man with a pair of horses can do the work expeditiously, and to our entire satisfaction. At first the horsemen said they should not be able to manage those straight rows with it upon which every drillman in East Anglia prides himself upon doing just a little better than anybody else, but we at once said the necessary degree of skill for this would soon be acquired, and at first we should be content if the whole of each field was sown.

We are sowing Sainfoin extensively this spring, some of the seed being home-saved, and other seed has been purchased at 24s. per sack of 4 bushels. Red Clover seed has fallen wonderfully in price since the season began, when 50s. per bushel could be had for pure bright seed, but it has now fallen below 30s. This seed, with Lucerne, mixed Grasses for temporary or permanent pasture, as well as Rye Grass, should now be sown without loss of time, for the soil is moist and is becoming warm, and in the best possible condition for the seed. To wait and have to encounter the possible risk through drought would certainly be wrong.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.				
1888. April.		Barometer at 32° and Sea Level.	Hygrometer. Dry.	Hygrometer. Wet.	Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature. Max.	Shade Temperature. Min.	Radiation Temperature. In sun.	Radiation Temperature. On grass	Rain
		Inches.	deg	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday	1	30.063	39 7	37.4	N.E.	40.0	49.4	32.8	91.9	25.4	—
Monday.....	2	29.867	42 5	38.2	W.	39 8	48.8	30 9	78.6	23.3	0.0.9
Tuesday	3	29.895	37.7	35 1	N.E.	39 7	46.3	30 6	93.3	25.2	—
Wednesday ..	4	29.792	36.6	34.0	W.	39.2	42 9	29 1	74.3	22.2	—
Thursday	5	30. 70	37.9	34 7	N.E.	38 4	43.5	29.8	94.2	22.8	—
Friday	6	30.279	37 0	32.9	N.	38 4	47.5	27.7	98.1	20.3	—
Saturday	7	30.246	38 2	36.0	N.	38.5	49.0	27.9	85.2	20.1	0 083
		30.063	38 5	35.5		39.1	47 2	29.8	88 7	22.8	0.100

REMARKS.

1st.—A bright spring day.
2nd.—Slight shower in morning, otherwise fair till 3.30, then dull and showery; cold clear night.
3rd.—Generally bright, but with one or two slight hail and snow showers.
4th.—Bright early; dull morning, with frequent flakes of snow falling; fair afternoon.
5th.—Bright early; fair morning, with occasional flakes of snow; bright afternoon, cold night.
6th.—Bright and clear morning, cloudy afternoon with spots of rain.
7th.—Fine and generally bright day; rain in evening and night.

Much warm sunshine, but keen air and frost every night; a cold week, the average being rather below that due to January 1st.—G. J. SYMONS.

FORCING STRAWBERRIES.

WE are now in the midst of the season for forced Strawberries, and a few remarks on the subject may be of service to those in need of advice. Unfortunately no general rules can be laid down, so much depending upon the facilities that each possesses for forcing. In any case it frequently takes two or three seasons to discover which varieties best suit the place, and to find the most suitable positions for them. As far as we are concerned no difficulty is experienced in producing ripe fruit by the middle of March, or when Strawberries cannot be bought for less than sixpence each, and this season not one plant in fifty has failed either to flower strongly or set a good crop. The earliest to ripen is a little known variety we have under the name of Princess of Prussia, this being a sure and heavy cropper and from a week to ten days in advance of Vicomtesse Hericart de Thury. The latter, however, is the better in point of colour and flavour and a better traveller. What makes the fruit still more valuable is the fact that it is of good flavour gathered direct from plants growing in a temperature and atmosphere suiting Pines, Beans, and Stephanotis. The favourite variety with my employers, however, is Sir Joseph Paxton; this ripens early in April, is of taking appearance, travels well, and is of good flavour. President for a succession and British Queen for the late supplies complete our list.

At one time our plants were started on the shelves in the early and successional Peach houses, being transferred to strong heat as soon as the crops were set. In these positions, where they naturally require abundance of water, they render the borders underneath very wet and sour, and we have now hit upon a better system in every way. In the first place the good old plan (which as a boy I did not like) is adopted of cleaning the pots, clearing off the rubbish and surface soil, and after the sides are well rammed a top-dressing of rich loamy soil is given. The requisite number, or say fifty plants, more or less according to the requirements of the establishment and the shelves to be filled, are plunged in a gentle hotbed of leaves not far from the glass in a heated pit. There they soon form fresh foliage, and the roots also being active fine trusses of bloom are thrown up. Plants are thus started every fortnight, and where it can be practised this will be found a sure, easy, and cleanly method.

Many succeed very well up to a certain point, but they fail to set the strongest or first flowers, and it is no unusual occurrence for the principal portion of early plants to be useless. The latter is most to be regretted, but I dislike losing the first strong flowers, as these only are followed by fine fruits. It is, however, possible to set every flower early in the season in a high temperature and a moist atmosphere, if only the precaution is taken to carefully fertilise each when fully expanded. This brings me to one of the most important factors in our success with Strawberries.

For various reasons it is advisable to dispose the Strawberry shelves as near a pathway as possible, there being no better position than against the comparatively low back walls of three-quarter span-roofed forcing houses, and if these are not sufficient, suspended shelves within easy distance of the pathways, as well as front benches over the front hot-water pipes are suitable. We rely on the back wall shelves principally, the plants being set on these just as they are opening the first flowers. There they are easily reached for the purpose of fertilising, and those in charge have no excuse for neglecting to keep them well supplied with water. For effecting a good set I have tried syringing, tapping the trusses when dry, and the use of either a camel-hair brush, a piece of sponge, or the skin side of cotton wool, and prefer the sponge to any of the others. It is advisable towards midday to gently sponge each flower, this effectually lodging the pollen on the numerous tiny stigmas. This artificial method of fertilising may not be necessary after this month, nor at any time when plenty of air is admitted to the plants in full flower, but I hold it unwise to leave anything to chance, and never mind spending a little time in "sponging or setting" Strawberry flowers. In any case it obviates the necessity for keeping the plants in an airy house till a good set is effected.

Strawberries are sure fosterers of red spider and other pests in a less degree, hence the advisability of keeping them out of vineries and Peach houses as much as possible. It is better to be without a few dishes of early Strawberries than incur the risks of spreading red spider on the Vines and trees. High back shelves, although not the best places for Strawberries, are necessarily often utilised for their culture in pots, and it is in these positions where they require most water and very often get the worst attendance in this respect. Troughs that hold water are sometimes recommended for Strawberries, but although this may save the watering pot, it has a most prejudicial effect upon the quality of the fruits, these being nearly as sour as vinegar. Mr. Taylor when at Longleat used to stand all the pots on small squares of turf, and into this the roots soon found their way. Many are unable to procure thin turf suitable for this purpose, and in spite of Mr. Taylor's undoubted success with Strawberries in pots, I believe a good bed of fresh moss even preferable to turf. Our plants, being started in a genial hotbed, invariably send a number of roots through the drainage holes, and in order to preserve these we adopted the plan of covering the shelves intended for their reception with moss. The roots take readily to this, and I believe derive some support from the moisture and liquid manure that it holds. Turves will, if of a clayey nature, become sour, but not so the moss, nor does the soil become dry so quickly as when the plants are set on bare boards.

Whatever plan may be adopted it is unwise to leave many fruits on a plant, from six to nine on each, according to the varieties, being ample. The numerous small fruits ought to be removed early, and before the reserved fruits commence ripening all should be neatly propped up with Birch twigs. This greatly improves their appearance, saves the stems from being bent or crippled, and keeps the fruit clear of the soil or any dirty water or liquid manure that may be used. Much in every case depends upon those in charge of the houses, and when I can point to a good crop of fruit I never hesitate to give the foreman full credit for his share in the work. All head gardeners well know what a relief it is to have a man under them who never neglects the Strawberries and other plants in pots. The Strawberries occasionally require water twice in a day, liquid manure frequently, and syringing daily. Neglect of these details becomes only too apparent when the crops are swelling.—W. IGGULDEN.

[Six large fruits of Sir Joseph Paxton Strawberry accompanied this communication, four of which were extremely handsome and well developed; the other two were slightly deformed, and were sent to show the effects of imperfect fertilisation. Five fruits weighed about 4 ozs.]

LAST summer being an exceptionally dry one it was a difficult matter to procure Strawberry runners even for late summer plantations, while securing good ones for pot culture and forcing was quite out of the question, as none was produced until late in August; at least that was my experience in this dry chalky soil. Wishing to overcome the difficulty I decided to push on my plants that had been forced and try them again; therefore, in the beginning of June all the best of them had the soil shaken out, the

longest roots were shortened, and the plants placed at once into their largest pots, using two-thirds loam and the rest decomposed manure. They were potted firmly, and afterwards plunged in coal ashes until the pots were full of roots and the plants required more room, when they were treated in the usual way to secure good crowns and have them well ripened before storing away. My object in writing is to let you know that the plants have more than answered my expectations, for those that have just fruited have borne a much heavier crop than I could have had from maiden plants. The varieties are President, James Veitch, and Vicomtesse Hericart de Thury. I send a fair sample of the ripe fruit of each, also a specimen of the fruit as it set on the plants not thinned. If a similar difficulty should again occur in procuring runners those forced the previous season may with proper management be depended on for a crop a second season. I might mention that a short time after potting the plants produced some flowers, but these were carefully picked off.—THOMAS RECORD.

[The plant sent had seventy well set green fruits in different stages and a number of flowers to open. The ripe fruits were very handsome, and amply proved the success of the practice recommended.]

CROTONS AS DECORATIVE PLANTS.

THE present is a capital time to set about the increase of the stock and the preparation of the plants for summer and autumn use in the house, as at those times, where foliage plants are appreciated, nothing surpasses Crotons either for the dinner table or in the decoration of rooms. The varieties are now so numerous that no difficulty need be experienced in forming a good collection. The narrow-leaved drooping varieties are most preferred, but some of the upright, broad-leaved sorts are equally valuable for some positions. The brightest coloured varieties are much the best, as green or dull-coloured foliage plants can always be had. To keep up a stock of serviceable plants, cuttings should be struck in the autumn, using 2½-inch pots, in which the plants can be wintered in the stove, choosing a position near the glass, where they will not be drawn up weakly; nor should they long remain dry at the roots, or a loss of the lower leaves will take place, much to the disfigurement of the plants. This is a good time to give such plants their first shift from the cutting pots into those 4 inches in diameter, using a compost of equal parts peat and loam, a small quantity of leaves partly decayed, a dash of finely ground bones, some charcoal, and a plentiful addition of sharp silver sand. Some persons use no loam, but add sphagnum moss instead. To my mind this compost is much too porous; the loam adds solidity to the growth, and the foliage is retained much longer. In potting, press the soil about the roots firmly; growth then is more sturdy, and the leaves of a better colour. Replace the plants on the shelf close to the glass, where they can be exposed to the sun, as without it the foliage will not colour brightly. Where such a position is not available a capital makeshift can be adopted by drilling three holes in a triangular form into an ordinary saucer or feeder, just below the rim; to these holes place three wires, the length to be guided by the height of the plant. Inside the saucer place another one, but smaller; on this stand the plant, suspending the whole from a nail driven into the rafters of the roof. Crotons in this manner, particularly the drooping varieties, are not at all objectionable in appearance, while the position for their welfare is one of the best obtainable. Short, stout shoots taken off now, inserted singly in small pots of sandy soil, placed in a propagating frame over a brisk bottom heat, quickly form roots and grow into useful decorative plants by the autumn or end of the summer. It is a mistake to overpot Crotons; it is much better to use a substantial kind of compost, giving water freely to the roots, varying it occasionally with weak liquid manure, when the pots are well filled with roots. A lack of water during summer quickly renders the plants shabby by a loss of the lower leaves, and discolouration of many of the others.

To obtain plants for immediate use, well clothed with foliage, the process known as "ringing" must be employed, which is done in the following manner. Any plant with only one stem or more, which has been in constant use and lost its lower leaves, should have a ring cut around the stem about half an inch wide, removing the bark at that place at a distance of from 6 inches to 1 foot from the top. Around this incision wrap some moss, to which has been added some sand; tie the moss on tightly, and keep it moist by frequent syringings during the daytime. Roots will quickly form in the moss, and when they show through to the outside of the moss cut off the shoots and place them into pots sufficiently large to contain the roots, moss and all. Place the plants in a propagating case, or under handlights, excluding air until new roots are formed in the soil, when it may be gradually admitted until free exposure will not harm them. If the syringe is used vigorously amongst Crotons, as it should be, mealy bug cannot increase.

The following are good varieties for decoration in a small state:—

Drooping varieties.—Picturatus, green, blotched with red; Sinitzinianus, golden blotched; nobilis, red; angustifolius and aureus, both belonging to the golden class; Johannis, long leaves, marked with yellow; Warreni, having long twisted red leaves; majesticus and interruptus, two older red-leaved sorts, still useful for their hardy qualities. Many more might be added, but these are all well-tried varieties.

Erect varieties.—Queen Victoria, Williamsi, and Hanburyanus are useful varieties, with red foliage; while the best yellow Crotons are Morti, Hawkeri, Disraeli, and variegatus.—S.

VEGETABLES FOR EXHIBITION.

ONIONS.

Tripolis.—These are usually included in the collections of vegetables shown in June, July, and frequently to the end of August. They are also the best to enter in the classes for the heaviest Onions. The seed ought to be sown late in August or the first week in September, on good well manured ground, and in drills 12 inches apart. If a few are wanted extra early the seed may be sown on a sheltered sunny border, those not disturbed at the thinning out time usually being the first to bulb. As a rule an open piece of ground is best, or it may be near where the Onion beds are eventually to be formed. If the plants are at all crowded they ought to be lightly thinned in the autumn, otherwise they should not be disturbed. The ground may be deeply dug or bastard trenched during the winter, plenty of solid manure being mixed with every spit, one end of this to be devoted to the Tripolis, and the remainder to the spring-sown Onions. As early in the year as the state of the soil permits dress with plenty of road grit, if procurable, and also a mixture of soot and common salt—one peck of the latter to three of soot—this being applied in moderation, a bushel being sufficient for every 16 square yards. Fork this well in without disturbing the manure underneath, and leave the ground loose. As early in March as it is possible to work on the ground without making it pasty, transplant the Onions. Do not drag them out of the soil, but prefer rather to ease them up with a fork so as to save as many roots as possible. A few may be left about 6 inches apart in the seed bed to mature, and the strongest of those lifted be replanted. Open wide flat drills 12 inches apart and 2 inches deep, arrange the plants 6 inches apart, spread out the roots, and cover firmly with the soil. Some of the plants invariably run to seed, and these may be drawn and used early, those left on the ground being all the better for the extra space given. White Naples is the earliest to bulb, and can be had good in June. Later on I prefer either the Giant White Madeira or Giant White Tripoli. Giant Rocca is the heaviest, and may be shown in the single classes, but is not so telling in a collection as the flat white-skinned varieties.

Spring-sown Onions.—I have already described a good method of preparing the ground, but omitted to add that, provided it is not done too soon, it cannot be made too firm for Onions generally. Loose deeply cultivated rich ground invariably encourages rank growth, large, late-maturing, thick-necked Onions being the result. Making the ground firm prevents this, and I have always observed the handsomest bulbs are produced on the ground dressed with road grit. The finest spring-sown Onions are obtained by sowing the seed early in February in pans or boxes of fine soil, setting these in heat until the seeds germinate. The seedlings should not be shaded in any way, and when about 5 inches high they may be gradually hardened, and finally planted out in rows 12 inches apart and 6 inches apart in the row. Although comparatively small when put out, they will yet be considerably in advance of any raised in the open ground, and will maintain the lead throughout. Fine bulbs can be obtained in this manner early enough for the August shows.

Those who are content to sow in the open ground only may do so as early in March as the weather permits. If a good seed bed cannot be had, nor the ground trampled during the first week in March, wait another week or two for better weather. The drills to be 12 inches apart and rather shallow, the seed being sown thinly, fixed with the foot, and then carefully covered. Keep the flat hoe going among all advancing crops of Onions, this keeping down the weeds, also preventing binding of the soil, followed by cracking and the rapid evaporation of moisture. Thin the plants early, leaving

them 5 inches or 6 inches apart. Some will soon take the lead, and if these promise to bulb well they will further be assisted by having the ground lightly loosened about them, and then treated to a sprinkling of either soot, guano, superphosphate of lime, or sulphate of ammonia. Only a very little should be given at a time, and that in dull weather, this either being washed in by the rains or by water applied through a fine-rose pot. Show bulbs ought to need no twisting down of the necks to hurry bulbing, but if wanted early this may be resorted to if necessary. In hot seasons a mulching of old tan, leaf soil, cocoa-nut fibre, or grass from the mowing machine, if given either after a soaking rain or a good watering, will do good. The less artificial watering necessary the better if handsome bulbs are looked for.

Banbury Improved is a good type of White Spanish Onion for spring sowing, Sandy Prize, Naseby Mammoth, and Giant Zittau also being good.—EXHIBITOR.

TACSONIA VAN VOLXEMI.

ONE of the most beautiful of all conservatory climbers is this Tacsonia, with brilliant crimson flowers on long thread-like footstalks. It is easily raised from seed sown in any light sandy soil, covered with some of the same compost, placed in heat, and watered. If the seed is good the young plants will appear within a fortnight or three weeks from the time of sowing. They should, as soon as large enough, be placed singly into 3-inch pots in a mixture of four parts fibry loam and one of leaf mould, with a sprinkling of sharp sand, returned to heat, watered, and shaded from sunshine until the roots have taken to the soil. Shift the plants into 6-inch pots before the roots become matted, and grow them until about 3 or 4 feet high, when they should be planted out in a well-drained border, training to the roof of a greenhouse or conservatory. The best compost is formed of three parts fibry loam and one of peat, with a good sprinkling of sand. Train the shoots underneath the roof. When well established thin them, but do not stop the shoots. —W. H. W.

IMPROVING OLD VINES.

PRACTICE under difficulties is often useful, and I am constrained to relate particulars of some Vines taken in hand last season with a view to their improvement The house containing them is old fashioned. There is no lack of rafter, and the size of the panes of glass would disgust every cultivator of orchard house trees. The border is outside, and the roots are not very near the surface, for what reason I do not know, as the border is not sodden or poor. The house is heated by hot water, the rods being trained to wires in the usual manner, and there is ample ventilation.

The Vines had several rods each, some only a foot apart ; some were old, others young, all spur-pruned, and produce few and poor Grapes. The Vines had been started with the New Year (1887), the rods being brought down horizontally along the front of the house, and the buds were breaking very irregularly. The border had the scantiest covering of protective material, which did not extend up to the house so as to cover the stems. The rods were tied in position, for I do not see the advantage of depressing rods (with canes it is another affair), and they were as I thought very much too close. There were the old rods, one to each rafter, and between those others of varied age, making the distance between a foot and 18 inches. The whole had been spur-pruned. I decided to take out fully half the rods. Grapes, however, being a consideration I was constrained to reserve the marked ones until the fruit appeared, as those shoots that showed fruit could be retained and the other rubbed off. I determined to keep the best of the rods, one to each rafter, which are about 2 feet 6 inches apart, and to cut away all the others, which were the youngest rods, as they were badly furnished with spurs. The Vines had been kept to one rod for many years, then canes had been run up to get better or more Grapes, or with a view to displacing the old rods, but how all came to be retained is left to the imagination. There they were in February, 1887.

Out came the doomed rods in due season after they had finished the few Grapes, and the canes taken up were remarkable for weakness and length, but though straw-like, there was an increase of strength as they advanced from the origin, and were short-jointed and ripened well. The Grapes, too, finished satisfactorily. In autumn there were old rods, and young canes of 6, 12, and 20 feet length. Perhaps I ought to state that the border had a good dressing of lime in the autumn. About two bushels unslaked was applied in little heaps on the border, slaked by sprinkling with water, spread over the border hot, and pointed in at once. Before frost the border was covered with litter, adding about 18 inches thickness of leaves, with some long litter over to keep the leaves in place when the Vines were started with the new year. Lime is of no use, say some persons, and even Mr. S. Castle has doubts of the value of old mortar rubbish, but it is a fact that lime is present in most plants. Is the lime of no use when the roots come into the feeding ground it has prepared for them ?

Now for the Vines. No 1, Black Hamburgh. As the old rods were so puny in the shoots produced they were all cut away, and a cane taken up, which at first was no thicker than a quill, but gained strength as it advanced, the laterals assisting until it had a length of 20 feet and a thickness approaching that of the little finger. It was cut back to 6 feet, and had ten bunches of Grapes. No. 2, Black Hamburgh. Old rod left, spur-pruned—*i.e.*, to two buds, no Grapes ; cane very weak, cut hard back, no Grapes. No. 3, Black Hamburgh. Old rod retained, spur-pruned (in part), no fruit ; pruned four to six buds (part), no fruit. Cane very weak, cut hard back ; no fruit.

No. 4, Grafted Vine. Black Hamburgh stock, old rod reserved of the variety Alicante, ten spurs or their shoots pruned to two buds, showing five bunches, all other spur-shoots pruned to four to six eyes, giving eight bunches of fruit. The Black Hamburgh cane was pruned to 7 feet, and is carrying nine bunches of Grapes.

No. 5, Grafted Vine. Black Hamburgh stock. Old rod retained of Mrs. Pince which, when spur-pruned, gave no fruit. Cane of Mrs. Pince, pruned to 4 feet 6 inches, showed six bunches. A Black Hamburgh cane pruned to 6 feet furnished eight bunches, and another Hamburgh cane pruned to 2 feet afford two bunches.

No. 6, Grafted Vine. Black Hamburgh stock. Old rod Mrs. Pince, spur-shoots pruned to two buds ; no fruit ; whilst those spur-shoots pruned to four to six buds present four bunches of Grapes. This Vine has the run of two rafters—*i.e.*, double space, hence another old rod of Mrs. Pince was partly spur-pruned ; no fruit ; those pruned four to six buds have three bunches. Mrs. Pince cane, pruned to 4 feet 6 inches, had four bunches. A cane of Mrs. Pince, pruned to 2 feet 6 inches, has three bunches. A Black Hamburgh cane pruned to 2 feet 6 inches carries three bunches.

No. 7, Black Hamburgh. Old rod pruned to two buds fruitless ; pruned to four to six buds, three shows of fruit, which have twisted and curled into anything but Grapes. This Vine had no cane taken up in 1887. No. 8, Young Vine. Black Hamburgh. The old Vine collapsed, and the young one does not count, as it is only just planted, but the one shoot intended for the cane shows fruit.

It only remains to be stated that the treatment of the Vines is the usual one, but I have omitted to mention that the spouts were so arranged as to throw all the water from the roof on the border, which it is needless to say has been rectified. Perhaps I ought also to state that so bad was the border considered that a new one had been made for the young Vines in an adjoining vinery, which, so far as I can see, might as well have been left alone, as the roots may be 3 feet beneath the surface, but the Vines are fairly vigorous, and will no doubt push roots freely from the collar into the surface we have prepared for them with the lime and the protective mulching.

I shall only draw a few inferences. 1, The Grapes are all borne on the canes or semi-canes. 2, Where the parts were many, as in case of the old rods, there is no fruit of value. 3, The want of fruit was the consequence of weakness, due to overcropping and overcrowding. 4, The weakness and sterility are most decided in the Black Hamburgh. 5, Alicante and Mrs. Pince being strong growers and gross feeders, are most fruitful ; in fact much easier of cultivation than thin-skinned Grapes. The Vines are making canes double the vigour of those of last year ; indeed it is a question of roots, for the Vines are throwing out aërial roots, as they always do when the roots are not affording sufficient support. It is also worth note that the roots so excited are able to attack inorganic substances, thereby supplying its needs in that respect for the perfecting of its stones ; in fact it is difficult to account for Vines otherwise acquiring phosphorus, sulphur, and lime.—G. ABBEY.

AMARYLLISES (HIPPEASTRUMS) AT CHELSEA.

THE annual display of these choice hothouse flowers referred to on page 299, marks the rapid progress made in their improvement during the last decade. Seedlings have been raised at Chelsea and elsewhere years before this ; in fact, some of the best work performed by the celebrated Dean of Manchester (the Hon. and Rev. William Herbert) was the raising of cross-bred Hippeastrums. It is perhaps worthy of notice that one of the earliest of Dean Herbert's seedlings, Johnsoni or regio-vittatum, is yet, or was quite recently, in cultivation. I am not sure whether this was not the first hybrid raised in England, first by a watchmaker of Prescot, in Lancashire, named Johnson, in 1799, and also by Herbert himself at Mitcham in 1811, and again at Highclere later. It was raised by crossing H. reginæ with the pollen of H. vittatum, and Herbert's method of naming these hybrids was to link the two names

together. Thus H. regio-vittatum was Herbert's name for this early cross. Others named by him were aulico-vittatum, Goweni-vittatum, striatifolio-vittatum, Griffini-Johnsoni, solandræfloro-Johnsoni, &c., to the number of a score or more of these hybrids. Herbert's work was continued in different gardens for a period of thirty-four years, and at the time of his death a large collection of choice seedlings was left by him. A list of the principal varieties and species grown to hybridise from was given by a Mr. Carton (who served as gardener to him and also to his brother, the Earl of Carnarvon) in the first volume of "The Florist," page 239. They were Hippeastrum reginæ, H. equestre, H. solandræflorum, H. striatum, H. miniatum, H. rutilum, H. fulgidum, H. vittatum superbum, H. crocatum, H. psittacinum, H. calyptratum, H. stylosum, H. striatifolium, H. pulverulentum, and H. aulicum platypetalum. Mr. Carton, after the death of Herbert, took charge of the gardens at Syon House, Isleworth, and writing in 1848 he stated that most of Herbert's beautiful hybrids were lost. They were not all lost, as I cultivated some of them years ago, but they had to be discarded in favour of the fine forms raised in Messrs. Veitch's nursery or imported by them from the Continent. The vigorous constitution of the varieties named there is doubtless owing to such fine varieties as Empress of India, while the infusion of the handsome species H. Leopoldi has given form to the flowers. The best varieties of H. pardinum were also used with good effect. On looking over the collection a few days ago I was struck with the decided improvement made this year in the size, form, and colour of the flowers. For size, combined with form and rich colour, Chevalier is decidedly in advance of anything yet raised; the flowers are scarlet, with a greenish star, the petals 4 inches across, and 9 inches across the expansion of the flowers. Firebrand is very distinct in character from any other. Its parents might be Dr. Masters and Ackermanni pulcherrima, but it is superior to either of those in colour, which is a rich crimson, with dark maroon crimson at the base; good form. Acquisition is of a different type, light scarlet, mottled white, creamy bands, large flowers, of good form.

A score more besides these might be named and described, all of the very best quality. The strain has been so much improved that the production of high class seedlings is the rule, and ordinary forms the exception. Seasonable influence is an important factor in the development of these plants. It has been uphill work this year to bring them up to anything like the usual vigour, and the plants under the influence of London smoke must have felt the effects of the season more than those in the country. Of course as daylight increases the effects of this abnormal season will wear off, and any loss of strength sustained in the past will be made good in the bright days to come. We have been told that in some parts of England the Amaryllis can be grown well as a hardy border plant. Probably some of the South African species, or varieties raised from them, might succeed out of doors, but the best garden varieties have become inter-crossed with the tropical species from South America, and they are not sufficiently hardy to do any good even in a greenhouse temperature. We have been very successful with the culture of the tropical species, both with the named varieties and the raising of new varieties from seeds. For I never could settle down quietly to enjoy the fruits of other people's labour, but have always found a great fund of real enjoyment in anticipating the flowering of seedlings. It is now the time to hybridise them, and those intending to raise seedlings will not find the work very difficult. The organs of reproduction are very prominent, but to make sure that the variety from which the seeds are to be saved is not self-fertilised, the anthers should be removed before the flowers open, and two days after the flower opens the stigma spreads out into three divisions, and to the inner part of these the pollen must be applied. It, of course, requires some judgment and taste to select both the seed and pollen bearers. The seed bearer should possess a vigorous habit of plant combined with good form and quality in the flowers. The pollen bearer ought also to be of good quality and be possessed of clear and decided colours.

Those who are anxious to grow the Amaryllis should begin with the best varieties, especially if they intend to raise seedlings. It would be useless to start with what were considered the best five years ago, as the improvement in all respects has been much greater in that time than in the years preceding. We sow the seeds as soon as they are ripe in July or August. The young plants are quickly above ground, and form small bulbs by the end of the year, but they do not seem to have a resting period at all the first winter. The leaves remain quite green, and the plants themselves increase in size all the winter. Do not water them much, just enough to prevent the soil being dried. With good culture some of these small plants will produce flowering bulbs the following season, but the largest portion will not flower until they have made two seasons' growth. They do best placed in bottom heat and treated to a hothouse temperature.

The flowering plants have their season of growth after the flowers fade. The rapid production of leaf and flower from the bulbs seems to exhaust them so much that they shrink into much smaller proportions by the end of March, and a season of growth from April to the end of August is required to plump them again. During that period the process of development is very rapid, and any check to the growth would not be recovered from. The probable cause of an arrest of growth would be want of water at the roots, by an attempt to "dry them off" before their time. An attack of thrips or red spider might also do so. Both these pests are troublesome in hot weather. Syringing under the leaves will keep off red spider, and fumigating with tobacco smoke will annihilate the thrips. In September but little water is required; in October and the next two months none at all.

I repot the bulbs in the first week of January. The potting soil should be moderately moist. Plunge the pots in a gentle bottom heat, but do not water them at the roots for a month at least. The temperature of the house for that time need not be more than 45° to 55° at night, with a slight rise by day. The bottom heat of about 80° brings them on gently, and the temperature seems to be what they like, for we have generally by the middle of March a mass of flower spikes crowded together, in many instances three from one plant. I have had seventeen flowers from one bulb. Two-year-old bulbs will give two spikes, with six to nine flowers. When the plants have once made good growth in the early months of the year, it is a grave error to lower the temperature for the purpose of keeping them back for an exhibition or anything else, it gives them a check which they do not like. It is also very easy to injure them with water applied either too freely to the roots or in the atmosphere.

An excess of atmospheric moisture in the house will frequently engender decay in the substance of the bulbs above ground, while the same process goes on at the base of the bulbs from too much applied to the soil. It is far better to err on the side of over-dryness.—J. DOUGLAS.

YOUR note on the Amaryllises at Messrs. Veitch's prompts me to say a few words on the method we adopt with our plants. In few private places can a house be devoted to their culture, and to attain success much contriving is required. We have a good number of bulbs, but, unfortunately, the variety is but small; however, for decoration we find the plants useful, also the flowers when cut. About the middle of January the bulbs are potted, shaking off most of the old soil without damaging the roots, placing them in various sized pots, avoiding large shifts, 6-inch pots being the largest used. The pots are well drained, using a compost of loam, a small portion of peat, the loam being of a heavy character, a small quantity of finely ground bones, some charcoal and sand. The pots are stood upon slates over the evaporating troughs and pipes in the Melon house, where they have a brisk bottom heat. No water is given until the roots commence growing, except an occasional syringing; afterwards water is supplied freely, and occasionally liquid manure is given. Towards the end of March the flower spikes appear. As soon as the flowers expand the plants are removed to cooler quarters, a vinery kept at about 55° by night, and 5° more during the day. The plants stay there a few days until hardened, when they are transferred to the conservatory as required.

After flowering the plants are placed on a shelf close to the glass in a vinery where the moist heat required for the Vines favours the growth of the Amaryllises. When growth is completed the plants have a similar position in a Peach house where the temperature is some degrees lower than the vinery. The shelf on which the plants stand being suspended under the back lights of the house, which is a three-quarter span, they do not require shading, but have abundance of light and air. Water is gradually withheld to ripen the bulbs thoroughly, but we never dry them so severely as to lose the foliage, as we find that, and keeping the soil too wet during the winter months, result in a loss of many of the thick fleshy roots.—E.

CAMELLIAS IN THE OPEN AIR.

THE Camellia is not common as an outdoor shrub. It is a favourite in the greenhouse and conservatory, and in the rare instances when it is found in the open it is always looked upon as a curiosity. This is particularly the case where they have been planted in suitable positions and treated so that they have developed into fine bushes. Here we have some Camellia bushes on the lawns 12 feet high and as much in diameter. We make no attempt at sheltering them in winter; they have withstood many severe frosts, and at the present time they certainly look as healthy and well as other much more common shrubs. At Singleton in this county some huge bushes may be seen, and when I saw them the other day they were about to afford a wonderful display. Ours are later, but they, too, will soon be fine. Although the rain sometimes blemishes the blooms this is no charge against them, as all open-air flowers are liable to suffer in the same way. When not in flower, but only displaying their glossy green leaves, they are as ornamental as any other green-leaved shrub, and I am sure if Camellias were generally planted in the open air they would afford their owners much satisfaction. To those with "no glass" they would prove highly valuable and interesting, as they would always be able to cut flowers in the open air in April and May. As a rule we secure our Camellia blooms from the open-air trees for the Church decoration on Easter Sunday, and they are amongst the most attractive flowers that can be gathered at that season. To some it may appear odd that they should bloom before Rhododendrons in the open, but such is the case, as although a few Rhododendrons may be in flower by the first week in April most of them are not out until after the Camellias. One reason why the latter do not succeed in the open is this. As a rule healthy young plants are never turned out, but old plants which have failed to do well under glass are planted in the open under the impression that anything is good enough to turn out. But I may say once for all that such plants are absolutely unsuitable for planting out. If strong clean healthy plants are transferred to the open they will probably grow as freely as if they had been kept under glass, and soon form as fine plants as they would have become in pots. The secret of success is a good beginning, and about the end of April or early in May is a good time to plant. The soil must be as good, and

they should be as well and carefully planted as if being grown under glass.—J. MUIR, *Margam*.

[A wonderful specimen of the old double Camellia is planted out in Baron Schröder's garden, The Dell, Egham. It is 15 feet high, 30 feet in diameter from tip to tip of the branches, and must be of great age. Protection is afforded in the winter by a kind of frame.]



ORCHIDS AT WILTON HOUSE, SOUTHAMPTON.

DURING the last few years the cultivation of Orchids has been largely extended in the gardens attached to Wilton House, the residence of J. Buchan, Esq., who is a thorough enthusiast with these plants. The collection consists of 4000 plants, all in capital condition, reflecting much credit on Mr. T. Osborne the gardener in charge. The houses are all substantially built and thoroughly adapted for the purpose required. The first, a warm house, is 40 feet long by 18 feet wide. The stages, which are covered with fine gravel, are edged with slate, the central paths are slate, the sides of the path being so constructed that they throw off a considerable amount of moisture when required. Capital tanks are constructed under the stages. In this house were very fine plants of Cypripedium villosum, 3 feet in diameter, in the best of health, growing in pans ; at the time of my visit a short time since one had thirty blooms. The quaint old C. hirsutissimum was in capital condition, as also were C. Sedeni, C. caudatum, and C. Lowi. Numbers of seedlings of this family raised here by Mr. Osborne are very promising. Very notable are Angræcum Leonis, Dendrobium Brymerianum, Calanthe vestita gigantea, a fine variety ; C. Regnieri, C. Veitchi superbum, Epidendrum prismatocarpum, a fine plant with thirty leads ; and Dendrobiums Dalhousianum and albo-sanguineum ; also the deliciously fragrant Dendrochilum glumaceum. The next house of the same size as previously noted was filled principally with Cattleyas and Lælias, between 500 and 600 plants in all. A plant of Cattleya amethystoglossa was growing on a block in moss litter, where it had been for two years in the best of health. The flowers had been in perfection seven weeks, thus showing that moss litter is good for this variety. C. Lawrenceana, rich in colour ; Lælia flava, deep yellow ; L. harpophylla, terra cotta colour ; Oncidium sarcodes in a pot suspended from the roof well flowered ; and Epidendrum Wallisi were the most noteworthy plants. The next house is 30 feet long, and contains fifty-five plants of Lycaste Skinneri, with the same number of Anguloa Clowesi and A. Ruckeri. There is an exceptionally fine variety of Lycaste Skinneri alba, snowy white, of the finest form. Of Dendrobium Jamesianum there are several good specimens, together with Miltonia cuneata, Masdevallia chimæra, Zygopetalum crinitum, and Trichopilia suavis. About fifteen healthy plants of Cattleya citrina were suspended from the roof flowering freely. A good stock of Odontoglossum Harryanum is flowering freely ; Cymbidium eburneum, Cœlogyne cristata alba, and Chysis bractescens promising well.

The cool house is nearly 100 feet long by 11 feet wide, built behind a north wall, and contains 1200 plants, all in excellent health. Noticeable were Odontoglossum Alexandræ and O. Pescatorei, some carrying forty blooms many shades of colour ; O. sceptrum, a good variety with a strong spike ; O. cirrhosum, O. triumphans, O. Blunti, O. constrictum, with twelve spikes ; O. luteo-purpureum, five spikes and fifty-six flower buds ; O. Pescatorei, with rich spots ; O. Sanderianum, O. gloriosum, O. Uro-Skinneri, and many others equally promising. A collection of about one hundred plants of Masdevallias Harryana, amabilis, ignea, Veitchi grandiflora, and tovarensis are in the best of health. An intermediate house 20 feet long and 14 feet wide, having an east aspect, contained many fine plants. An extra good variety of Cymbidium Lowianum, has twenty-five flowers on each spike ; Oncidium leucochilum has a fine spike and numerous flowers ; O. Marshallianum is rich in colour ; of Cœlogyne cristata Lemoniana there are about a dozen fine pans ; with Odontoglossum vexillarium and O. nævium majus, the latter a fine piece of this scarce variety.

Suspended from the roof and growing in baskets in a disused Melon house, which is reached by descending several steps, into which air is admitted from the outside by means of drain pipes underneath the floor of the house, is a collection of Phalænopsis Schilleriana, amabilis, Stuartiana, Sanderiana, Luddemanniana, violacea, and grandiflora, all in rude health, although small, being young plants. The treatment they receive appears to suit the plants exactly. The temperature is kept at 70° by night and about 85° by day.

In addition to the Orchids many other plants receive close attention. Grapes and Peaches promise well, a general collection of greenhouse plants is grown, double Cinerarias being worthy of note, while about 400 plants of Chrysanthemums grown for the production of large blooms looked as well as could be wished, comprising the leading new and old varieties.—VISITOR.

ORCHIDS AT BIRMINGHAM.

A PLAN of the large range of houses in the garden of the Right Hon. J. Chamberlain, Highbury, is given in Mr. Lewis Castle's useful book, "Orchids." No. 9, as shown on the plan, is the Orchid show house, and at the present time it is very gay. A path runs down the centre, and above the rustic rockwork on each side are the stages with a carpet of Selaginella and small Ferns, with the Orchids elevated and lightly arranged. Among the most conspicuous is a fine variety of Cattleya Lawrenceana and a richly coloured form of C. Trianæ, said to be nearly equal to the rare C. T. Leeana. Many others of this section are in bloom, ranging in colour from the one mentioned to nearly white, some known as the Popayan varieties having large open throats ; several plants of Cymbidium eburneum and C. Lowianum with arching racemes of bloom, both with clean and graceful foliage, which assists in showing the flowers to the best advantage. The Chatsworth variety of Cœlogyne cristata is in full beauty, and among Dendrobiums are D. crassinode Barberianum, that sweet-scented D. aureum, D. infundibulum, D. Jamesianum, with specimens of D. Wardianum well flowered, Odontoglossum Alexandræ, O. maculatum, O. Roezli, and O. Ruckerianum, with various Oncidiums make a show that will last until succeeded by Cattleya Mossiæ, C. Mendeli, and others already well advanced in sheaths and spikes. A large mirror at the end of the house adds greatly to the effect.

The plants in bloom cannot all be placed in the show house, and many are seen in their growing quarters. A Dendrobium house recently erected, about 26 feet long and 14 feet wide, appears to answer the purpose admirably. A large piece of D. macrophyllum giganteum bore flowers 7 inches across. D. chrysotoxum is well furnished with spikes. D. albo-sanguineum is well grown, having growths 15 inches in length. D. lituiflorum and D. trausparens are flowering freely. The stages are of open trelliswork above a moist border of ashes, and are so arranged that they may be raised or lowered to suit the convenience of large or small plants.

The Cypripediums do well in the Phalænopsis house, a C. Spicerianum has ten growths, eight of them being produced in four years from two leads ; C. Lowi is bearing three blooms on a spike, and the same answers the description of the chaste C. niveum ; here also Angræcum Leonis and A. Sanderianum, together with Aerides and Vandas, are flowering freely.

There will soon be a display in the large Odontoglossum house, as the O. Alexandræ section are well furnished with spikes, the chief plants being in bloom are quantities of O. Rossi majus, O. cirrhosum, O. pulchellum, and O. sceptrum. Adjoining this is a span-roofed house devoted to Lælia anceps, L. albida, Cattleya citrina, all in large masses. Sophronitis grandiflora, grown on blocks of Tree Fern trunks, and Oncidium Marshallianum are flowering very freely, and are grown close to the glass ; the spikes are dwarf and compact, bearing numerous large and bright yellow blooms. Some of the plants have been partly severed, causing them to break back from the old growths. In the corridor is a handsome specimen of Arpophyllum giganteum, which is mounted on a pedestal and surrounded with Ferns. It is 5 feet across, and carries eighteen large trusses of bloom. This is a graceful evergreen species too seldom met with in collections.

In a lean-to house facing south are remarkable plants of Lælia autumnalis, L. furfuracea, and L. majalis, Odontoglossum Londesboroughianum, and Oncidium Rogersi. These are growing almost touching the glass, and are never shaded. They are in pans and on blocks and ratts, and consequently take copious supplies of water. The foliage is thick and hard. Mr. Cooper considers this the only way to grow them satisfactorily. Under his treatment the pseudobulbs increase in size and number each year, and flower freely.—G. W. C.

NATIONAL AURICULA SOCIETY
(SOUTHERN SECTION).

CIRCULARS have been issued to all the members of the Society informing them of the arrangements for the exhibition to be held in the Drill Hall of the London Scottish Volunteers, James Street, Westminster, on the 24th inst. I am writing this note on the 14th, and a few days ago the prospects of the northern exhibitors getting their plants in was problematical. Now things are much more pro-

mising for a good show. One of the leading northern exhibitors intends to be present, and I hope to hear that more will be able to say they will come south in a day or two. I hear the flowers have come in rapidly since the change in the weather. When vegetation has for long been in suspense by adverse weather it is astonishing how rapidly it moves with a favourable change. I hope members and visitors will not only attend in force themselves but will also bring their friends with them. An excellent luncheon will be provided at the "Hotel Windsor," quite close to the Drill Hall, at 1.30 P.M., tickets for which can be obtained from the Secretary or Chairman of Committee, the Rev. H. H. D'Ombrain, "Hotel Windsor," Victoria Street, Westminster; also from any member of the Committee. The Council of the Royal Horticultural Society have kindly placed the Drill Hall at the service of the Society, and Mr. Barron will receive the entries from exhibitors as usual. Other spring flowers besides Auriculas are likely to be exhibited, forming a really good spring show, and a large attendance of visitors would make things lively and pleasant all round.—JAMES DOUGLAS, *Hon. Sec.*

ARTIFICIAL MANURES FOR PLANTS.

I HAVE repeatedly noticed, when reading the various controversial subjects which are from time to time brought forward in the horticultural press, that one of the contending parties will assert that in some moment of weakness and bewilderment his opponent has put forward arguments that prove beyond dispute the correctness of the views they were intended to refute. This appears to be the course taken by Mr. M. Coombe in his latest contribution to this subject, but I think a few words may be given on the other side of the question.

I am quite prepared to uphold my previous statement that we should aim at giving plants as far as is practicable "Food that is varied in its chemical constituents according to the nature of the plants that are to receive it, the object for which they are intended, and the condition they are in at the time it is applied." Now I maintain that this cannot be done in so satisfactory a way by continually giving one kind of manure either in a liquid or solid form as by varying the food supplied according to the stage of the plant's growth. As my opponent is so emphatic in his opposition to my remark that "a knowledge of chemistry may enable us to form various manures which are likely to supply the most suitable food," I will offer no objection to his proposed substitution of the word "undoubtedly," as I am by no means opposed to the generally acknowledged fact that a knowledge of chemistry is extremely useful to both gardeners and farmers. What I wish to point out is, that it is not wise to place too much reliance on only a rudimentary knowledge of it; because, before we can carry out the theories of chemistry in a simple, sound, and practical way, much time must be spent in making experiments; minute calculations must be made to find out the component parts of soils, manures, plants, and the various gases they imbibe from the atmosphere. In the case of plants in pots, when we have so many differently constituted to deal with, it would be altogether too troublesome and expensive a method to have different manures for each, and I maintain that unless we do that we must depend to a very great extent upon what experience and observation teach us are applicable to plants generally; and I think I am on firm ground in asserting that the greatest part of successful gardening has been accomplished by giving plants and fruits a systematic change of manure.

Your correspondent shows us that the Potato contains 50 per cent. of potash and only 4 per cent. of lime, while the Grape Vine contains them in nearly equal proportions, and asks if these facts cannot be used to considerable advantage in the preparation of our composts and plant food. My answer is, Certainly they can, and I also add that gardeners have long since found out that farmyard manure (which is saturated with the urine of quadrupeds), and the refuse of the farm and garden converted into ashes, supply a large per-centage of potash, and form one of the best of all manures for Potatoes. It is also admitted by the majority of gardeners that Vines require a larger per-centage of lime than most other plants, and in the preparation of their composts for making Vine borders generally add a certain proportion in some form or other, unless they are satisfied that the soil already contains a sufficient quantity, which I think myself is rarely, if ever, the case.

But after knowing these facts I cannot agree that anyone would be wrong in treating his Vines to a course of Peruvian guano, as I consider it one of the best and most powerful of all fertilisers for Vines if applied at the right time and in proper quantities, but I think no successful grower would depend solely upon its use as a manure for them. Neither does it possess such a large per-centage of ammoniacal constituents as some people imagine. According to Dr. Ure guano consists of the following proportional constituents: Azotised organic matter, including urate of ammonia, and capable of affording from 8 to 17 per cent. of ammonia by slow decomposition in the soil, 50·0; water, 11·0; phosphate of lime, 25·0; ammonia, phosphate of magnesia, phosphate of ammonia, and oxalate of ammonia, containing from 4 to 9 per cent. of ammonia, 13·0, siliceous matter, 1·0. These figures show what a powerful and efficient fertiliser it is, and explain why we hear of failures resulting from its use, simply because it has been used too freely. Use it at the rate of 2 ozs. to a gallon of water, or sprinkle on a Vine border 5 ozs. per square yard, and water it well in. Apply it in this way to Vines that are carrying a heavy crop of fruit, just as the berries commence swelling, give another application when colouring begins, and let the intermediate waterings be made with liquid from the stable, cow-shed, or the drainings from the manure heap, and then see if the results are not satisfactory, more so than they would be if liquid manure obtained from the other sources mentioned were only used.

The same course of manures will produce equally satisfactory results if used for Melons, Tomatoes, or Cucumbers, but care should be taken to always give the strongest manure when the strain upon the plant's energies is the greatest. This would certainly be giving the plants a "something," but it would contain food which experience and observation had taught us would produce good results. Much depends not only upon the kind of food given, but also at what stage in the plant's growth it is supplied. Were I to give large quantities of liquid manure to Melons before they had set their fruits, and to plants before the soil in the pots was filled with roots, I should cause the one to become gross and unfruitful, and the other to languish and decay.

I consider the most striking paragraph in Mr. Coombe's article is the one in which he defines the difference between the practice he advocates and my own, and by the way he put his case I should say he would make a grand "advocate" but a poor "judge;" he there says that I prefer to give the plant a strong stimulant to start it, then wait for development, afterwards giving it various compounds as fancy dictates. This is altogether misrepresenting what I wrote. I used these words: "If you want to induce a strong and vigorous growth give them stimulants in which ammonia-yielding substances preponderate." Now it often happens that this is exactly what we do wish to obtain. A quick and vigorous growth in Palms, Cannas, and fine-foliaged plants of many kinds is very desirable, and for these plants the largest and best growers of the day use stimulants abounding in ammoniacal constituents. In other cases where plants are in a stunted or unhealthy condition—as, like human beings, they sometimes will be through want of proper nourishment, or of attention at a critical time—for the plant the first consideration is to get it into active growth again, and experience teaches us that such manures as nitrate of soda applied in small quantities will have that effect. Is it, then, wrong to apply it to the plant any more than it would be wrong for the doctor to prescribe for the human being stimulating food consisting of a larger proportion of alcohol than he would consider desirable at ordinary times? In both cases when the object in view was attained the food given would be altered, not as fancy dictates, but such as experience proves to be right. From the time a boy first enters a garden with a view to learning the art, till he relinquishes the occupation he is—or ought to be—continually learning the various kinds of soils and manures most suitable for the individual requirements of plants. Is this to count for nothing but "fancy?" If so, I will only say that some of the finest horticultural productions have been grown on this system intelligently carried out.

In regard to the desirability of giving plants different kinds of manures in preference to keeping to one, I think there can be no disputing that the greater number of gardeners are in favour of the change. Observation teaches them that it produces the best results, arising, I believe, partly from the analogy there is between plant and animal life, and partly in consequence of the various stages of growth that vegetable life passes through. I turn to the writings of Mr. Molyneux. In his book on Chrysanthemums I find he says, "It is not wise to give the plants the same stimulants continually." The writings of other prominent cultivators of the day give advice in the same direction, and other well-known gardeners with whom I have come in contact say changes of manure are always appetising. These facts, coupled with the results of my own observations, lead inevitably to the conclusions I have given.

In commenting on my remarks about the treatment of soils in old kitchen gardens, Mr. M. Coombe says he should prefer a moderate amount of lime and a judicious amount of trenching. That no doubt would have the effect of utilising some of the excessive richness in the soil, but trenching is an expensive operation, that cannot always be carried out so much as is desirable. I think I can show that the application of lime would not "spoil the soil" to such an extent as he considers it would. The application of lime to such a soil as I described in my last article would have the effect of hastening the decomposition of animal and vegetable matters, and of imparting to the soil the power of retaining the moisture necessary for the growth of plants. It would simply present in a suitable form the food that was locked up in the soil, and the plants, by having such a stock of food open to them, would appropriate a far greater share than they would under ordinary circumstances; the crop would also show a corresponding improvement. That being so, it is reasonable to suppose that a dressing of manure would again be required.

Referring to the use of nitrate of soda, Mr. M. Coombe conveys to the general reader the impression that I have advocated the use of this stimulant to a greater extent than is the case. What I really pointed out was that a few doses had the effect of bringing sickly-looking plants into health again, and that when hard water had to be used for plants of Ericas and Epacrises, a little dissolved in the water given them would keep them in perfect health, and this anyone can prove for themselves. We all know that whatever plants market growers take in hand they grow well, because they make a specialty of them, and in order to bring them to such a state of perfection they require a course of very stimulating food. That the food given them is suitable the results show, but why they so often become candidates for the rubbish heap when they pass to the private grower I will at present leave an open question. It

cannot be solely because they have been highly stimulated, because those that are retained by the market growers to supply larger-sized plants the following year do not share the same fate; but I should not like to suggest in the case of Mr. Coombe that his treatment was unsuitable. If he will give me further particulars about the experiments he mentioned, with different kinds of manure applied to a pasture, telling us the time of the year these manures were applied, if all at the same time, and what kind of manure, if any, had been applied for a year previous, I will do my best to arrive at a correct solution of the problem he has given me.—H. DUNKIN, *The Gardens, Longford Castle, Salisbury.*

NOTES ON GLADIOLI.

GLADIOLUS DISEASE—IMMATURE CORMS.

WHEN your old time correspondent, "D., *Deal*," adopts any theory he keeps to it with delightful consistency. The Gladiolus disease is a case in point. At page 295 he brings it forward again "with some degree of satisfaction." It is needless of course to say that the Gladiolus is not subject to a disease, but though there is a disease which attacks the corms, your correspondent may rest assured that many growers are not troubled with it. In my own case I know hardly anything about it, but I do know that the great difficulty with many of the later-growing varieties is found in the shortness of our seasons and the inability of the plants to produce matured corms in the time they have to grow. Mr. Murphy, with a longer season, not only grows but flowers such a beautiful late variety as Duchess of Edinburgh, but here it only begins to show its spike when the season closes. Anyone who knows the Gladiolus will see at once the impossibility of growing this variety a second year, for the simple reason that the corm has had an insufficient period in which to grow and mature. Last year, owing to the exceptional season, very few immature corms were produced, and, as I noted in a previous communication, all the later varieties were well started in boxes before planting out, thus securing a longer season of growth. Mr. Kelway's dictum, that "seasons govern results," accords entirely with my experience. Some varieties I have grown for fourteen years, but they are early flowering, all the later ones dying through immaturity in the "bad" years. The last few years I have again worked up large numbers of some sorts, and if good seasons rule I expect no difficulty in continuing to do so.

HARVESTING THE CORMS.

With regard to the time of harvesting, I find it a safe rule to lift the earlier varieties directly the corms are finished. This will be seen by the foliage beginning to turn yellow. The danger of leaving these is to be found in rains, after a season of dryness, causing the corms to throw out roots. Late varieties are best left as long in the ground as possible, and I like to have some soil attached to the roots in the case of these.

CUTTING THE CORMS.

With regard to cutting the corms I quite agree with your correspondent. As instances of its very powerful tendency to cause growths to start, I have Enchanteresse with three growths, Thérèse de Vilmorin with four, and a large number of others with from three to five growths from one corm.

The following I do not see in the list of varieties given by "D., *Deal*." They are so fine that their omission is strange:—Dictateur (1886), Amitié, Eugène Souchet, Phidias, and Teresita. The following I should not care to go without, although not so good in some respects as the above:—Diamant, Le Phare, Orphée, Panorama, Sylvie, and Pénélope. Some of those in the list at page 296 do not succeed here: such are André Leroy, Colbert, L'Unique Violet, Jupiter, Madame Desportes, Murillo, and Grand Lilas.—B.

DEATH OF MR. J. WOODBRIDGE.

WITH deep regret we have to announce the death of Mr. John Woodbridge, of Syon House Gardens, and the news will afford a painful surprise to his numerous horticultural friends. Mr. Woodbridge was attacked by a cold on April 7th, which resulted in congestion of the right lung; other complications arose, from which he was too weak to recover, and he succumbed on the morning of Friday, the 13th inst., in the fifty-seventh year of his age. The funeral takes place at 2 P.M. to-day (Thursday), at the Isleworth New Cemetery.

Mr. Woodbridge was widely known and respected; his career as a gardener has been varied and successful, and his unobtrusive kindliness of manner won him many earnest friends. He was born in Amersham, Buckinghamshire, and commenced his gardening career at the Rectory of that town. A love of his calling was early developed, and his knowledge extended by periods of service as a young man in the gardens of the Marquis of Londonderry, Fulham; of Lord Chelsea, Putney Heath; and of the Hon. C. C. Cavendish, Latimer, Bucks. From the last-named garden he removed to that of Lord Boston, Hedsor, Maidenhead, and there, under Mr. Davis, gave considerable attention to fruit and Pine culture. Mr. Woodbridge subsequently passed some time at Gunnersbury Park and at Syon House; he was also engaged with Mr. Forest in laying out the Surrey Gardens, and in Messrs Garaway and May's nursery at Bristol.

His first appointment as head gardener was in the service of W. Tothill, Esq., Stoke Bishop, where he gained more than local fame as an exhibitor both of plants and fruits. Four years were afterwards spent at Kiddington Hall, Oxfordshire, and he was then appointed to the charge of the Orchid and Heath department in the Royal Gardens, Kew.

In July, 1870, he was engaged by the Duke of Northumberland as head gardener at Syon House, and so well were his services appreciated that he was promoted to the office of steward and agent in 1882. He there deservedly acquired the reputation of a careful thoroughly practical gardener, whose varied experience had rendered him conversant with all departments of horticulture, and he justly claimed to have gained some special knowledge in nearly every one of his situations.

During the past sixteen years Mr. Woodbridge was a member of the Fruit or Floral Committees of the Royal Horticultural Society; he was also a member of the Apple and Pear Congress Committees, and in February of the present year he was elected on the Council of the above Society. He was one of th



Fig. 41.—MR. JOHN WOODBRIDGE.

most earnest workers on behalf of the Gardeners' Orphan Fund, in which he took a deep interest, and at the time of his death was a member of the Executive Committee. He also frequently acted as a judge at metropolitan or provincial shows, and occasionally contributed to the horticultural papers.

A description of Syon House Gardens was recently given in this Journal (Feb. 23rd, 1888), and for the portrait of the late Mr. Woodbridge now published (fig. 41) we are indebted to the Editor of the *Gardeners' Magazine*.

VINCAS.

THESE pretty stove perennials are not so often seen in gardens now as they were twenty years ago, yet they flower freely from the points of the young growths during the summer months. They may be increased from seeds sown in a mixture of sifted sandy loam and leaf soil, covered lightly with the same compost, watered, and placed in heat, where, in due time, the young plants will appear. As soon as large enough they should be pricked out thinly in a pan, subsequently placing them singly into 3-inch pots, employing a mixture of three parts fibry loam and one of leaf mould with a little sharp sand. Return the plants to heat, giving

water to the roots, and shade from sunshine until the plants are established in fresh soil, when it should be discontinued. Pinch the young shoots a few times to cause them to branch. Propagation by cuttings inserted in heat is the method of procedure usually adopted. Vinca rosea, flowers rose, with dark centre ; V. alba, pure white ; V. alba oculata, white, with red eye.—W.

Notes & Gleanings

EVENTS OF THE WEEK.—Besides the usual sales there are few horticultural events arranged for the present week. On Tuesday next, however, the Royal Horticultural Society will hold their Committee meetings in the Drill Hall, James Street, Victoria Street, and the National Auricula and Primula Society's Southern Show will be held on the same day in same Hall, to be followed by a luncheon at the "Hotel Windsor" as noted on another page.

—— ROYAL HORTICULTURAL SOCIETY.—The programme of arrangements for the meetings of the Scientific, Fruit, and Floral Committees for the present year. The Scientific Committee meet at 111, Victoria Street, and the other Committees hold their meetings in the Drill Hall, James Street, Victoria Street, on the following dates :—April 24th.—Auricula and Primula day, Azaleas, Daffodils, Orchids. May 8th.—Orchid day, Narcissus, Asparagus. May 22nd.—Calceolarias, pot Roses, cut hardy and ornamental shrubs. June 12th.—Cut Rhododendrons, hardy Azaleas, flowering shrubs, Ranunculus, Anemones, Iris. June 26th.—Begonias, Gloxinias, Pelargoniums, cut Clematis, Pœonies, Roses, Pinks. July 10th.—Roses, Lilies, Strawberries, Begonias, July 24th.—Carnation and Picotee day, Ferns and Selaginellas, Ivy-leaved and Zonal Pelargoniums. August 14th.—Hardy fruits, Phloxes, Pentstemons, border flowers and cut Clematis. August 28th.—Hollyhocks, Gladiolus, fruit of all kinds. September 11th.—Dahlias, Begonias, Asters, fruit of all kinds. September 25th.—Grapes, Tomatoes, autumn border flowers. October 9th.—Early Chrysanthemums, Apples, Pears, October 23rd.—Hardy fruits, Potatoes, Vegetables. November 13th.—Chrysanthemums, English Oranges. December 11th.—Hardy shrubs, berried plants, Ivies in pots, Primulas, Chrysanthemums, Poinsettias. The undermentioned special prizes are also offered for competition on July 10th by Messrs. John Laing & Sons, The Nurseries, Forest Hill—Six Tuberous Begonias, single, distinct, first prize 40s., second prize 30s., third prize 20s. Three Tuberous Begonias, double, distinct, first prize 20s., second prize 15s., third prize 10s. Open to amateurs and gentlemen's gardeners only. Schedules of the National Auricula and Primula Society's Show (April 24th) and the National Carnation and Picotee Society's Show (July 24th) are included, with lists of the members of Council, officers, and Committees.

—— A LIST OF NEW GARDEN PLANTS.—The issue of the "Kew Bulletin" for April contains a descriptive list of new garden plants, recorded from 1st October, 1886, to 31st December, 1887, to which the following remarks are prefixed :—"The number of new garden plants annually described in various English and foreign periodicals renders it a matter of considerable difficulty to botanists and horticulturists to keep them in view. As long ago as 1860 a list of new garden plants was published in the "Gardeners' Year Book and Almanack," and this list was continued regularly until the "Year Book and Almanack" of 1886, which contained the new plants of the year 1885. The new plants up to October, 1886, were published by instalments in the columns of the *Journal of Horticulture* during the months of January to May, 1887, inclusive. Since that time no list of new plants has been published, and it is believed that it is no longer likely to be issued by private enterprise. As the publication of a list of new garden plants is of the greatest possible interest to botanical establishments everywhere, and as such a list would give information respecting many new plants grown at Kew, and distributed, in course of exchanges, to correspondents in all parts of the world, it has been determined to continue the list as one of the regular issues of the 'Kew Bulletin.' It is believed that such a publication will be of service to the horticultural world generally."

—— IT is announced that an ANGLO-DANISH EXHIBITION will be opened at South Kensington on May 14th next by the Princess of Wales. The garden and conservatory recently occupied by the Royal Horticultural Society have been devoted to the purpose, and the Secretary is Capt. Bax, late Assistant Secretary to the Society just named. The surplus arising from the Exhibition is to be devoted to the benefit of the British Home for Incurables at Clapham.

—— A CORRESPONDENT notes that "On the occasion of the visit of Lord Salisbury to North Wales recently he was the recipient of a NOVEL BOUQUET, over 3 feet in diameter, composed entirely of Primroses and Violets. It was designed and furnished by Messrs. F. & A. Dickson and Sons, The Queen's Nurserymen, Chester."

—— THE WEATHER.—Our northern correspondent, "B. D.," says :—"There has been no frost during the week ending the 16th, the thermometer during the night only once being as low as 36°. Cold W. and N.W. winds prevailed during the first two days. Bright sunshine and occasional slight showers have marked the week, and yesterday (15th) a close genial rain fell heavily in afternoon and evening. This morning (16th) is mild and cloudy." In the south there has been a very agreeable change in the weather ; a much higher temperature and occasional warm showers are hastening vegetation very rapidly. The shade temperature has varied from 50° to 65° in warm situations.

—— A SHEFFIELD correspondent writes :—"Spring appears to be with us at last, and everywhere vegetation is starting into life. Grass is growing fast, Gooseberries and Hawthorns are bursting into leaf, Jargonelle Pear flowers will soon be bursting, and are very plentiful. There promises to be a fine display of blooms on hardy fruit trees generally, and as it will now necessarily be very late before opening we may fairly anticipate a good set and consequently a good fruit year."

—— MESSRS. J. CARTER & Co., High Holborn, send us some extremely fine CINERARIA BLOOMS, gathered from the 500 plants they now have in flower at Perry Hill. Some of these are 3 inches in diameter with florets three-quarters of an inch broad, of great substance, and surprisingly rich varied colours. We are also informed that this firm has been selected to supply grass seeds for the London parks under the control of the Metropolitan Board of Works.

—— GARDENING APPOINTMENT.—Mr. C. W. Chard, lately foreman at Cleveden, Maidenhead, succeeds Mr. H. Rogers as head gardener to Sidney Lawrence, Esq., Bygrove House, Clapham Park.

—— EUCHARISES AT CARDIFF CASTLE.—A gardener writes—"About two years ago I regarded the Eucharises at Cardiff Castle as the best plants I had ever seen. Since then much has been said about them in these pages, and this made me rather anxious to see them once more, which I did the other day. I need hardly say I found them looking as well as ever, and if anything improving. They are grand specimens ; many are growing in pots 20 inches in diameter, and the plants are 6 feet through. Eucharis culture is not generally well understood, and all who wish to succeed could not do better than follow Mr. Pettigrew's advice. There may be more than one way of growing Eucharises successfully, but I certainly give Mr. Pettigrew's system the preference. I might write much respecting the excellent crops of Grapes now well advanced, the Peach trees, the fruit trees in the open, and the fine-foliage plants under glass, but all these were noted recently."

—— BRITISH PRODUCTS EXHIBITION IN HAMBURG.—Mr. G. A. Pogson, British Vice Consul, Colonnaden 104, Hamburg, sends us a circular on competition in trade, one clause of which states that he has, "after long and mature consideration, decided to establish a sample room of British products and manufactures at Hamburg, which will be divided into sections comprising articles of consumption, raw products, textile fabrics, manufactured goods, new inventions, &c. The samples will, when desirable, be exhibited in cases of uniform size—viz., 6 feet high, 3 feet broad, and 1 foot deep, which will be supplied at a nominal cost to the exhibitor. The annual fee for such space, which can be secured for one, three, or five years, has been fixed upon the scale of the German sample room at the Hamburg Exchange—viz., £7 10s., exclusive of insurance and cost of delivery. No trading of any kind will be undertaken, but where agents exist, their names and addresses will be legibly displayed on the cases, whilst the excellent telephonic communication of the town, combined with the contiguity of the business quarters to the sample room, which is close to the Exchange, will ensure

the almost immediate attendance of the agent when deemed of importance to exhibitors or inspectors of samples. A suitable staff of trained business assistants, proficient in foreign languages, will be attached, and a commercial library and other sources of information will enable them to supply buyers as well as exhibitors with useful and prompt information. A visitor's book will be kept for the benefit of firms displaying samples, and proper steps be taken to secure an inspection of the rooms by all buyers visiting Hamburg. Samples, which can be renewed at will, as well as price lists, descriptions, and circulars, will, when desired, be distributed to visitors without further charge to exhibitors."

—— We regret to learn that Mr. W. Stacey, of the Nurseries Dunmow, Essex, died last week, after a painful illness of three weeks. Mr. Stacey was much respected in the district, and was also widely famed for the numerous beautiful Verbenas he raised, no less than eleven of which have received first-class certificates from the Royal Horticultural Society. The following were the names of those so honoured and the years they were shown :—Countess of Rosslyn and Lady of Lorne in 1873 ; compacta, delicata, Fantastic and Mabel in 1883 ; Lord Brooke and striata in 1884 ; Distinction and Fairy Queen in 1885, and Lady C. Beresford in 1886. Many others have also been raised that have become popular both for bedding and culture in pots.

—— The usual monthly dinner and conversazione of the Horticultural Club was recently held at the "Hotel Windsor," Victoria Street, Westminster, which is likely to be the future quarters of the Club, and was attended by a large number of members, amongst whom were the Rev. Wm. Wilks, Rev. F. H. Gall ; Messrs. Crowley, H. J. Veitch, H. J. Pearson, C. E. Pearson, Geo. Paul, and James Walker. The arrangements were considered by all to be in every respect an improvement. In the evening an admirable paper was read by Mr. James Walker on Daffodils, and a discussion was entered upon afterwards, in which Mr. Wilks and others took part.

—— Fruit-growing in Hampshire.—A meeting of those interested in the fruit-growing industries of South and West Hampshire was held, under the presidency of the Mayor, at Winchester last week. Lord Wolmer, M.P., was amongst those present. The object of the meeting was to consider the sale of fruit, and more particularly Strawberries, at Covent Garden. Mr. H. R. Lamport, who has been studying the district, pointed out that 850 tons of Strawberries left the neighbourhood in one season, which averaged £59 per ton in value. The railway charges were about 7½, and the commission in London 12½ to 15 and 20 per cent. One London firm turned over in one week 2000 tons, and the object of the meeting was to do the work of that firm, which must have realised a very large profit. It was decided, after a lengthy discussion, to form an association of growers to consider what steps should be adopted to obtain a better price for their produce. Lord Wolmer subsequently spoke on the subject of railway rates.

—— A monthly meeting of the Notts Horticultural and Botanical Society was held last week at the Nottingham Mechanics' Institute for the purpose of hearing a number of papers read on "The Duty of the Gardener to his Employer," for which three money prizes had been offered by Mr. S. Thacker. Mr. J. Booth presided, and among others present were Messrs. S. Thacker, J. S. Baldwin, F. Granger, J. W. Woodward, J. D. Pearson, J. Dixon, C. J. Mee, J. H. Walker, J. Bennett, H. Ralphs, J. Baker, J. Simpson, J. B. Hallam, N. H. Pownall, &c. Some fine Orchids were shown from Lord Newark's gardens at Holme Pierrepont (gardener, Mr. A. Parr) ; a basket of splendid Mushrooms was also sent from beds which had been in bearing all the winter. Mr. S. Thacker having made some remarks with reference to the exhibits, Mr. Woodward read the essays under their respective *noms de plume*. The prizes were awarded by ballot, the result being :—1st prize, 20s., "Excelsior," Mr. N. H. Pownall (gardener to Mr. F. Wright, Lenton Hall) ; 2nd, Mr. J. H. Walker (gardener to Mr. J. W. Lewis, Hardwicke House The Park, Nottingham) ; 3rd, Mr. S. T. Wright (Glewston Court Gardens, Hereford). Votes of thanks to the donor of the prizes and to Mr. Woodward for reading the papers concluded the meeting.

—— "W. K. W." writes : "The large plant of Rhododendron Veitchianum growing at Oakholme, Sheffield, the residence of Thos. Wilson, Esq., which has for some years past had more than a local reputation, and of which some notice has appeared in this Journal in previous years, is now in full beauty. It is carrying a total of 480 flowers, about three-fourths of which are fully expanded. The flowers are each nearly 4 inches in diameter, stout and waxy in texture, handsomely fringed, agreeably perfumed, and pure white. The plant is trained over a stone wall, forming the back wall of a ridge-and-furrow-roofed lean-to greenhouse facing south, but is partly screened from direct sun heat by tall Camellias planted out in a bed occupying the whole centre of the house The roots of the plant are confined to a very narrow border (less than a foot in width) running along the base of the wall and bounded by the flagged pathway. It receives a light top-dressing annually of lumpy peat and sand, and makes very luxuriant and strong growths. Many fine plants of the newer varieties of greenhouse Rhododendrons are now flowering finely at Oakholme and are all in robust health, but none can, I think, vie with R. Veitchianum. Mr. Hannah, the head gardener, has grown this plant from a cutting to its present size, and is justly proud of his work."

—— Cinerarias and Calceolarias at Reading.—"J. B. C." writes :—"Cinerarias just now make a bright and effective show in Messrs. Sutton & Sons' nursery. In Sutton's Superb Mixed every care has been exercised in selecting the very best plants from which to save seed, the flowers being symmetrical in form, fine in size, of the richest and most varied colours, habit of growth robust. A strain having somewhat smaller flowers than the preceding, produces a large per-centage of flowers true to the colours from which they are saved, comprising light blue, blue tipped, crimson, crimson tipped, purple, light rose, and white, the whites especially good and pure. A novelty was observed in a beautifully striped flower, the 'stripes' running longitudinally. Double-flowered Cinerarias were noteworthy, and producing abundantly their 'rosettes' of flowers so useful for button-holes, bouquets, and similar work. Of Calceolarias we noted grand plants, a few flowers 'peeping' here and there from the wonderfully healthy head of foliage. Auriculas, of which a particularly healthy and varied stock is grown in frames, were likewise showing flowers. Cyclamens and Primulas were just fading, but even at this late time enough was seen to show what an imposing floral spectacle they must have presented when in full flower."

PLANTING HARDY PERENNIALS.

Annually with the advent of April intending planters of choice hardy plants usually set about their work in earnest. If they have not made up their minds as to what they shall have no time should be lost in doing so, for by losing a showery April month for any such planting operations we are sacrificing time of the greatest value. To have the plants well established in the borders or beds before the dry weather sets in is no mean advantage to all concerned, for it avoids the uncertainty attending summer planting. It is very likely that during April and May more hardy plants are placed out than at any other period of the year. This is only natural, as many are just then commencing growth, the result being that they start readily and without any apparent check. It may therefore be worth while calling attention to some of the most showy and desirable, and in doing so I particularly desire to draw attention to one important particular—viz., the size and quality of plants most likely to succeed. Too often hardy plants are supplied in small pots, in which they have stood probably for a couple of years or more, with the result that they are miserably weak and stunted, with the ball of earth and roots as hard as stone ; and should these come into the hands of the inexperienced and be planted with the hard ball undisturbed, the chances are very much in favour of partial or total failure. I am not entirely opposed to planting such as are established in pots, indeed some are very much benefited by this treatment, and make quicker headway in consequence, provided they are planted out as soon as the pots are fairly filled with roots. The majority can, however, be transplanted much better when good-sized pieces are secured, taken from the open ground. It would be very much to the advantage of purchasers of hardy plants to pay a proportionately higher price and insist on having strong plants from the ground. I will now briefly name some of the most important species and varieties, any or all of which may be planted when weather permits.

Achillea Ptarmica plena, 2½ feet high, flowers double, pure white, very abundant, excellent for cutting, and upon an equal footing may be placed A. serrata fl.-pl. Achillea millefolium rosea, 2½ feet high, rose coloured heads of flower, very free and useful for cutting.

Aconitum autumnale, dark blue, very attractive, 2 feet high, a valuable plant.

Alstrœmeria aurea, 2 feet high, beautiful orange red, grand for cutting, suited to a warm sunny spot, impatient of being disturbed.

Anchusa italica, 3 feet, a very attractive free-flowering perennial, with intense blue flowers, not suited for cutting purposes.

Anemone japonica and varieties, all extremely useful and free-flowering autumn perennials, 3 feet high.

Antherieum liliastrum and the majus variety are very useful : flowers pure white and bell shaped, on erect spikes 1½ foot high.

Aquilegias in many varieties, all very beautiful and pleasing. The best are cœrulea, blue and white; californica, scarlet and yellow, 3 feet; chrysantha, golden yellow, 3 feet, one of the best; glandulosa, blue and white, a very telling plant, 1 foot high, and others.

Armerias, or Thrifts, are a very interesting group. The best are cephalotes rubra, alpina grandiflora, and plantaginea. The flowers are produced from grassy tufts of leaves on erect stems, from 1 foot to 1½ foot high, terminating with globose heads, thriving in any ordinary soil, and revelling near the sea coast.

Arnebia echioides is one of the gems among hardy plants that no garden should be without; it flowers continuously from May to September, grows about 1 foot high, and produces in endless quantity sulphur and yellow flowers, on which are some black spots, that disappear when the blossom has been expanded for a day or two, perfectly hardy, and succeeding well in any rich light loamy soil.

Asters or Michaelmas Daisies are very serviceable throughout summer and autumn. Very useful for cutting for harvest festivals, church decoration and the like. A few of the best are longifolius formosus, pinkish rose; cricoides, white, very elegant; bessarabicus, fine blue; novæ-angliæ, magenta; novæ-angliæ rubra, red; lævis, rich blue; lucidus, clear lavender blue. There are many more, but these are all good and showy.

Campanulas or Bell Flowers constitute a very important group, and no garden should be without a dozen of the best, such as carpatica and its variety alba, glomerata speciosa, persicifolia alba coronata, and persicifolia alba plena, grandis, and grandis alba, Hosti, nobilis, pulla, pumila, latifolia and Van Houttei. These would make a good assortment to commence with, all being good and showy.

Perennial Cornflowers, Centaurea montana, and varieties.—All of this group are daily becoming more popular; they are extremely useful and free flowering, specially attractive as cut flowers, and have the additional advantage of flowering twice in the same year, and being of an average height of 2 feet are suited to large or small gardens. The colours vary from white to pink, bright red, blue, and sulphur. They commence flowering in June. If the old stems are cut away when this flowering is completed they will produce a second crop in the late summer months quite equal to the first. In the case of old clumps divide and replant. They do much better if watering be attended to till re-established.

Chelone barbata coccinea, a brilliant perennial, with spikes of scarlet Pentstemon-like flowers, 3 feet high; the leaves are of a bright glossy green produced in spreading tufts.

Chrysanthemum maximum, showy perennial Marguerite; flowers pure white, 3 inches across, plant 2 feet high, very free flowering.

Corcopsis lanceolata.—The true type of this is comparatively scarce, that usually sold for it being, no doubt, seedling forms of C. auriculata. The true plant has been beautifully figured in the *Journal of Horticulture*, and both in form and general appearances far surpasses any other of its tribe; the colour is bright golden, height 2 feet, and flowers in the wildest profusion. It may be distinguished when not in flower by its slightly procumbent growth and distinctly lance-shaped leaves. That usually sold under the name has compact tufts of leaves, very much in the way of Œnothera serotina or Youngi.

Delphiniums.—These are all handsome plants of easy culture; their noble spikes are always admired, and when established no plants have a more majestic bearing. For association with Hollyhocks in the back row of the herbaceous border these are most fitting. Many fine forms may be raised from seeds, and if a good strain of the latter is obtainable it will prove most interesting. The best named varieties are really thus obtained, so that by careful selection a good assortment may soon be had. When planted in a deep rich loam and left for several years their massive flowering spikes are handsome in the extreme.

Dictamnus Fraxinella and albus are old-fashioned perennials, growing 2½ feet high, forming neat bushes, and producing handsome spikes of red and white flowers. Very attractive border plants.

Doronicum (Leopard's Bane).—Nothing is more effective among spring flowers than those expanding their flowers in April and continuing for weeks in succession. Their flowers may be described as related to the Marguerite, and of a bright golden, splendidly adapted for cutting or for pot culture for cool conservatory. The best are D. austriacum (2 feet high), and D. plantagineum excelsum (3 feet); the flowers of the last named are about 3 inches across; it is very handsome, though not so freely flowered as the first-named kind, nor yet so early. Both are grand for the border.

Echinacea (Rudbeckia) purpurea is one of the most distinct plants among perennials; the colour can hardly be called purple, as would be gathered from its specific name; it is rather a reddish claret with a magenta shade, and compares with no other plant of my acquaintance in this respect. At 100 yards distant this plant attracts attention; the effect is excellent when grouped. It flowers in August and September; flower bracts 3 inches and more across, produced in quick succession. The plant has a vigorous habit, and may be classed among the handsomest of all hardy herbaceous plants. Bees are extremely fond of it. As it is somewhat slow of increase at the root, endeavours should be made to secure seeds, and thus add to the existing stock. April and May is an excellent time to divide this plant, and by reason of its woody rootstock I find it a good plan to wash away all the soil previous to dividing them.

Erigeron speciosum, an attractive border perennial, growing 2½ feet high, the flowers are of a bluish mauve, about 2 inches across, and borne in great profusion throughout summer and autumn; it is excellent in a cut state, lasting fully a fortnight, quite fresh, and invaluable.

Eryngium amethystinum.—This singularly beautiful plant is rapidly increasing in popularity. Few plants are more picturesque than this when in flower. It attains 3 feet high, having somewhat spiny leaves and cone-shaped flower heads of an amethystine blue, the same colour pervading the stems and bracts. The plant has a much-forked inflorescence, generally rigid; and when by hot sunshine it is all beautifully coloured it is effective in the extreme. Among cut flowers this lovely tint is quite unique.

Gaillardias.—In this group we have all that the richest colours and brilliancy could suggest, such as are not found in any other genus. There are crimson, orange, and gold to be found in happy combination in some flowers, intensified beyond description in many others, and toning down to clear primrose selfs in others; indeed, from a single packet of seed hardly two flowers will be alike, while all are beautiful. The plants are easily managed, and succeed well in good ordinary garden soils.—J. H. E.

(To be continued.)

BIGNONIA TWEEDIANA.

The genus Bignonia, of which over 200 species have been described by botanists, contributes several beautiful climbing plants to our collections both in stoves and conservatories. Their chief fault is one that is not too common in cultivated plants—namely, an excessive luxuriance that can only be kept in due bounds by a liberal system of thinning or pruning. For large conservatories they are, however, very useful, and produce their showy flowers in great abundance. An old but beautiful member of the genus, B. Tweediana, was shown at a recent meeting of the Royal Horticultural Society from the Pendell Court gardens, when a first-class certificate was awarded for it. A small branch loaded with its large bright yellow Allamanda-like flowers, as shown at the meeting in question, is represented in fig. 42, which gives a good idea of its character. The flowers are 3 inches in diameter, with broad lobes, and tubers about the same length. The plant was introduced from Buenos Ayres by the Hon. W. F. Strangways in 1838, and gradually found its way into many of the larger collections of plants, but it is not very often seen at the present time. It thrives well planted out in a conservatory, a suitable compost consisting of fibrous loam, peat, or leaf soil and sand.

GHENT INTERNATIONAL SHOW.

April 15th to 22nd.

Ghent, which is essentially a great emporium of plants, is, during the period indicated, the great centre of interest in the horticultural world. From all the countries of Europe horticulturists have congregated in the interesting old Flemish city; many by invitation as jurors appointed to co-operate in awarding the honours at the great Show; many in the capacity of visitors to inspect its treasures; some as exhibitors, and all as friends to the object in view—the representation of horticulture on a broad basis and in its highest form. As friends, too, all who by their presence gave their adherence to that object have been received by the courteous and hospitable Belgian people, who are identified with horticulture, commercially, or as patrons and supporters of it, as an element that knows no nationality, and which contributes powerfully to the sum of human happiness.

The Ghent Quinquennial Exhibitions are, as the term implies, held every five years. There is no uncertainty about them, for they come when the time comes and are prepared for accordingly. With such preparation, and under an organisation that appears as stable as it is complete, great expectations were created and great results are achieved. As indicating the extent of the preparations for the Exhibition it may be stated that the schedule embraces 370 classes, and nearly 800 medals are offered, about ninety of these being gold of 200 francs and 100 francs in value, the remaining medals, which are offered in the minor classes, and as first and second prizes in the more important competitions, being médailles de vermeil (silver-gilt) and médailles d'argent (silver). No money prizes appear to be granted except in one optional case, but objects of art equal or exceed in value the gold medals. Large gold medals are given by the King and Queen, the former for twenty-five specimen Palms, the latter for the largest and most meritorious collection of Orchids; by the English Van Houtte Memorial Committee for new Azaleas and forced shrubs in honour of the illustrious man whose name will never die; by the President and Secretary of the Society, the Comte de Kerchove de Denterghem, and Mr. Charles Leirens for collections of plants; by the brothers De Smet, in remembrance of their father, the late active and genial M. Louis de Smet, for 60 Azaleas; by the Members of the Council of Administration for 20 Imantophyllums; by Baron Henri de Ranst de Berchem for 30 Cypripediums in memory of the Comte de Gomer; and by the Federation of Belgian Horticultural Societies for forty grand specimen Azaleas, this prize consisting of a special gold medal and a work of art, or their value, 500 francs. The remaining prizes are offered by the Royal Agricultural and Horticultural Society of Ghent, supplemented by grants

from the Province of Flanders, the commercial and civic authorities of Ghent, and by the Government. It appears to be the custom of the latter to make a grant to any public object to which the commercial and civic authorities subscribe, to the extent of one-third the amount—that is to say, should those authorities subscribe 20,000 francs towards a public park, statue, or horticultural exhibition, the Government would grant 10,000 francs, besides affording other facilities for assisting. Such is the provision made for the twelfth Quinquennial Exhibition of the Royal Horticultural Society of Ghent, and it will be conceded that the whole system differs somewhat from that followed in England in connection with undertakings of a similar nature.

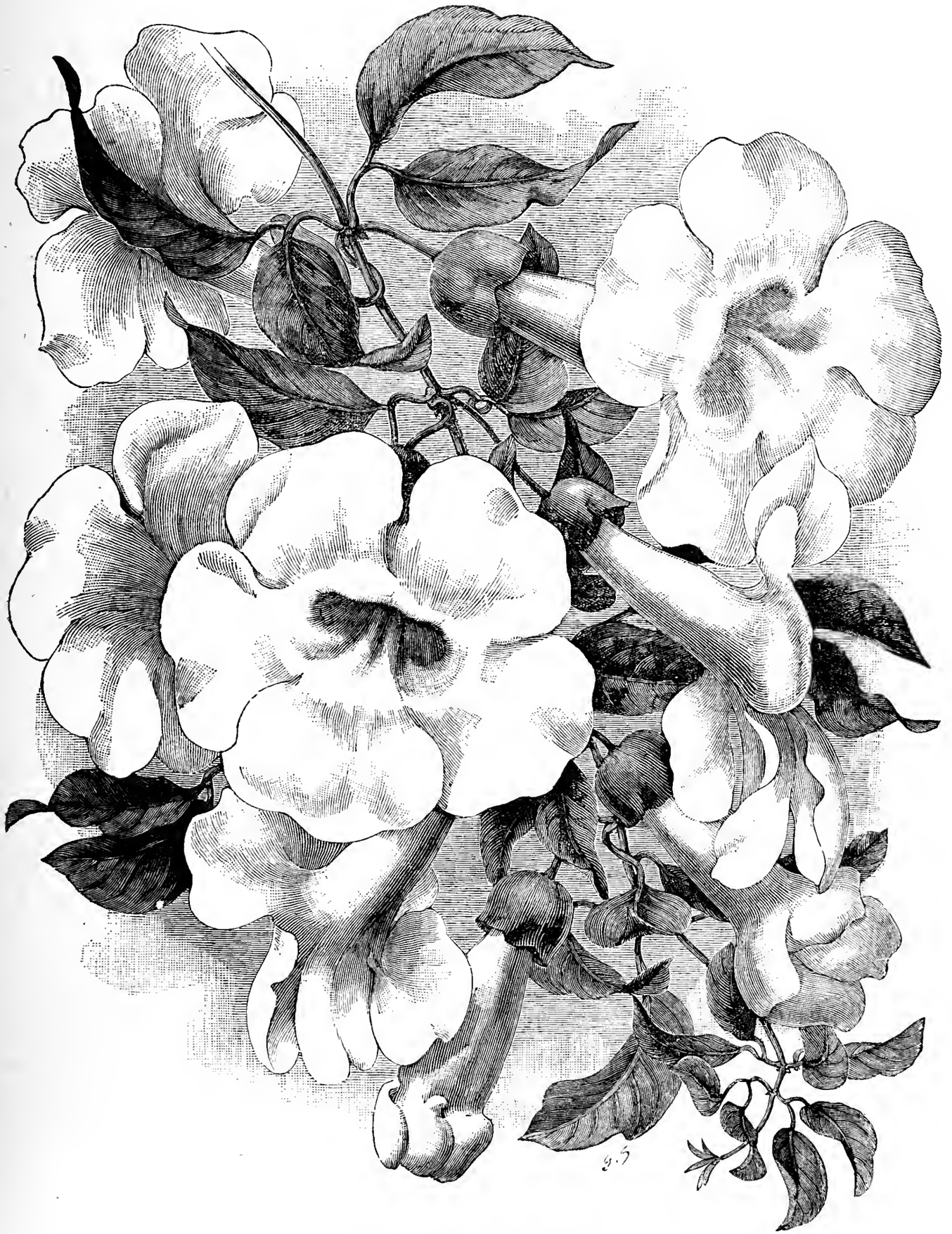


Fig. 42.—BIGNONIA TWEEDIANA.

There is a difference, too, in methods of detail in the working of exhibitions in the two countries. In England the plants are rushed into the building or tent on the morning of the show day as a rule, and are not always in position by the appointed time, and half a dozen, more or less, of judges race through the work of adjudication, feeling themselves

fortunate sometimes if they can complete their duties before being invaded by the public. There is no such hurry-scurry at a Ghent Quinquennial Show. Many plants, such as large Palms, were in their positions on Thursday, and practically all of them on Friday, ready to be judged on Saturday morning, this work being entrusted to upwards of a hundred jurors, representing different nations, who complete their duties before night. Then the work of arranging begins, and is continued till finished, the collections being disposed for spectacular effect. Imposing Palms tower almost to the roof of the casino; such plants are not seen in English shows, and afford relief to the truly magnificent Azaleas that are displayed in bold masses. Ornamental foliaged plants are disposed so as to enhance, if possible, the beauty of the Imantophyllums, Anthuriums, and other flowers, the whole representing a magnificently furnished garden. The chief building is about 250 feet long by 100 feet wide, but this does not suffice for the collections, other rooms from 60 to 100 feet long, besides a wooden building about 300 feet by 50, with a glazed roof, being crowded with collections. Several plants are also arranged in glass structures in the gardens. In the grounds Bays in tubs are remarkable for their size and deep green foliage, indicative of superior culture, such specimens we believe being unknown in England. Conifers are very good, but not more meritorious than the collections at our best home shows. Greenhouses and frames do not compare favourably with those of British manufacture either as regards workmanship or design. Many boilers and other garden requisites, with excellent examples of horticultural art literature, elaborate plans of parks and gardens, illustrations of training fruit trees, and sundry other items combine in forming a very diversified, interesting, beautiful, and extensive Exhibition.

The King, with the Crown Prince and Comte de Flandres, attended by Ministers of State and a military retinue, visited the Show on Saturday morning at ten o'clock—that is, before the Jurors commenced their duties and the exhibits were artistically arranged, still they were so far placed in position by great effort during the previous night as to render the effect highly imposing and worthy of Royal inspection. His Majesty arrived at the time of the roll call, or when those present of the 140 Jurors invited were called to answer to their names. The King was introduced to the Jury by the Comte Kerchove, and conversed in Flemish, French, German, and English with several individual Jurors, and was exceeding affable to all with whom he came in contact. The different exhibits were examined minutely by the Royal personages, who spent two or three hours in the Show, departing highly satisfied with their inspection. Before leaving the Casino His Majesty presented a gold medal to Professor Reichenbach in recognition of his services to botanical science, and especially as an orchidist of universal fame.

The Jury numbered 140 persons from Germany, England, Ireland, Austria, Belgium, Brazil, France, Italy, Holland, Russia, and Switzerland, the English representatives consisting of Messrs. Bause, Bull, Cannell, Harvey (Liverpool), Head, Hill (Tring), Hogg (Dr.), Iceton, Ker, Laing, Masters (Dr.), O'Brien, Protheroe, Richards, Sander, Shuttleworth, Turner, Veitch, Warner, Watson, Williams, Wright, and Moore (Glasnevin).

Some of the chief awards are as follow :—The Queen's gold medal for Orchids to M. A. Peeters, objects of art falling to MM. Ch. Vuylsteke and J. Bray, and gold medals to MM. Vervaet, M. J. Hye-Leysen, Madame Block, and De Smet-Duvivier; M. Hye-Leysen also securing Baron de Ranst's gold medal for Cypripediums. M. A. Dallière secures the object of art for variegated foliage plants. M. Van Houtte receiving a gold medal for these, also similar honours for Nepenthes, Palms, New Holland plants, with the Veitch Memorial prize for new Azaleas, as well as the object of art offered by M. Charles Leirens for forty specimen plants in flower. M. P. Van Driessch-Leys winning the other prize (for forced shrubs) offered by the English Committee. Count Paul Heptinne and A. D'Haene have gold medals for Aroids, the first named and M. Jacob Makoy winning similar medals for Bromeliaceous plants. The King's medal for twenty-five Palms is taken by M. Ghellincke de Walle, who also secures the prize offered by the Federation of Belgian horticulturists, with an object of art for Azaleas, a similar honour going to M. Vuylsteke, and the De Smet Memorial prize is won by M. Vercauterin. M. Baumann wins high honours for Rhododendrons, as does M. Pynaert Van Geert, also for new plants, Pernettyas and various other exhibits. The object of art offered by the members of the Council of Administration for twenty Imantophyllums was awarded to M. B. Spae, MM. Boelens Brothers securing a gold medal in the same class, and M. Van Houtte a framed medal. Gold medals for Camellias were adjudged to MM. Louis Eechaute and E. de Cock; for Hyacinths to MM. Byvoet and Kersten; and premier prizes are won by M. A. Van Geert in many classes. Mr. B. S. Williams is granted a silver-gilt medal for his Orchid Album, Mr. Harry Veitch being awarded similar medals for his works on Orchids and Conifers. A silver-gilt medal is awarded to M. Dutry-Colson for garden tools and requisites. The new establishment of this firm, which is the largest of its kind in Belgium, was opened on the occasion of the Show, and attended by many visitors.

The Exhibition in the great hall was arranged after the judging by M. Jules Van Eechaute, son of M. Van Houtte's competent manager, and the young gardener must be complimented on doing so much and so well in the short time at his disposal. The Comte Kerchove de Denterghem gave his active superintendence throughout the Exhibition, to which there are 300 contributors.

No attempt will be made to give a detailed and formal report of the Show, but the prominent features will be referred to. Passing the Palm groves and groups of Tree Ferns that overtop everything, and which are associated in the most picturesque and natural manner, we pause to admire the miscellaneous collection of fifty plants with which M. Louis Van Houtte wins the chief prize offered by the Comte de Kerchove. They comprise flowering and ornamental foliage plants of the best varieties, and both as regards superior cultivation and taste in arrangement it was unanimously conceded that a finer group of specimens, not one being faulty, was ever seen, and such a display could only be prepared in an establishment of the character of the world-famed Royal Nursery at Gendbrugge. As it is a question of giving the names of all or none the latter alternative is chosen; and possibly most readers if they were writers at two o'clock in the morning would adopt the same alternative. Mr. Ed. Vandenabeele, Gheut, also staged a beautiful collection.

Indian Azaleas are seen at the Ghent Quinquennial finer probably than at any other Show in the world, at least we know no plants of the kind to equal them. They are truly magnificent, most of them being grown on stems 2 to 3 feet high with mushroom-shaped heads from 4 to 7 or more feet in diameter. It would be impossible for any bouquetist to pack the flowers more closely, and rarely are these seen with so much substance and more pure and brilliant in colour according to the varieties. Further, when the foliage is searched for amongst and beneath the blooms, it is found much stouter in texture than is commonly seen in English-grown plants.

The Belgian Azaleas appear to possess more inherent vigour than do our peat-grown plants at home, and there is no mistaking the efficacy of leaf mould when rightly prepared and combined with otherwise good attention in culture. The majority of Azaleas in England have a starved appearance in comparison with the robustness of the plants in Belgium. Not only are these planted out periodically in prepared beds and watered and syringed systematically, the same as if they were in pots, but the plants are not allowed to flower every year, but are accorded a season for recuperation after having produced so many and large flowers, which cannot but have an enervating effect. Possibly, if not probably, most of the specimens that are so grand now, and grand they undoubtedly are, were not permitted to flower last year; therefore it may be assumed that if the different varieties of Indian Azaleas are to be presented in the finest possible condition, the plants must not only be accorded more nourishment than is to be found in ordinary peat, but they must also be relieved from the stress of developing every year all the flowers that form, but a period of rest for reinvigoration must be from time to time afforded. Nor must some of the buds be removed while others are retained, as that would result in irregularity of growth, and no such uniformity of floriferousness combined with equal vigour could be expected as characterise the plants as they are represented at this Show. As several of the plants must be many years old it were useless enumerating the varieties, for most of the newer surpass them in merit, and it must suffice to say that the huge mounds of white, pink, rose, pink, lilac, purple, crimson, and scarlet, cannot fail to impress all who see them by their intrinsic beauty and the cultural skill that is stamped unmistakeably on every plant in the Show.

Of the newer Azaleas the following are very good :—Comte de Paris (Van Houtte), red and white boldly flaked, one of the most distinct and beautiful in the Exhibition, and everybody should grow it; J. T. D. Llewelyn, peach, double, fine; Perfection de Gand (Vervaene), cerise, large and beautiful; Columba (Schulz), flaked like a Carnation; Vervaeniana, double, flesh pink, effective; Arlequin (Vervaene), distinct, somewhat like a pink and purple bizarre Carnation; Memoire de Van Houtte, purplish crimson, massive and fine; Comte C. de Kerchove de Denterghem, white, scarlet centre, striking; Roi d'Hollande, rich red; Madame Bertha Froebel, white, fringed; Madame Van Houtte, flesh pink; Mdlle. Pharilde Mathilde (Vervaene), very large double white; Dominique (Vervaene), deep orange scarlet; Baron N. Rothschild (Van Houtte), purple semi-double, fine; Madame Louise Vervaene, one of the best of the double whites; Candidissima (Vervaene) very smooth, an excellent single white companion.

Among the quite new varieties Souvenir du Receteur Kickx has double dark rose flowers; Prince Bandouin, upper petals purple, lower rose, very large; Bijou de Gand (Vandercruyssen) white, richly flaked with purple, like James Douglas Carnation; Bijou de Gand, very double rosy crimson. All these are very fine indeed, and in time will be largely cultivated. M.M. Van Houtte, Vervaene De Kneef, Cuvelier, De Schryver, and Vandercruyssen are adjudged prizes for new varieties.

In the long wooden building previously referred to are floriferous banks of Rhododendrons, magnificent groups of Ghent and other hardy Azaleas, remarkably well grown and profusely flowered Camellias, such as the best British gardener would be proud to have grown, plants in 8-inch pots bearing from forty to fifty blooms, with proportionally increased numbers on larger plants, the leaves of all being glossy and rich.

Now we come to a group of the most useful and nearly hardy Choisya ternata, the specimens 18 inches high and through, like white bouquets. Standard and dwarf Cytisuses arrest attention, the former with stems 3 feet high and golden globular heads 3 feet in diameter, the dwarf plants being larger and symmetrical masses of yellow racemes. There are also good pyramids, the whole being highly effective. Splendid specimens of Aspidistras, 4 to 5 feet across; Aralia Sieboldi variegata, and vigorous Indiarubber plants, afford evidence of superior culture.

Agaves are in good variety and well grown, and worthy of a position amidst their floral surroundings. Deutzias, Spiræas, and Migno-

nette are about the same as these plants are seen in England. Roses not quite so good as at home, Azalea mollis ten times better ; and we must not pass pyramids of Acacia armata from M. De Coster, 4 feet wide at the base and 7 feet high, close masses of soft yellow flowers, and, as specimens of culture, faultless.

Cinerarias are good and well grown, but not as regards varieties superior to the best English strains, at least regarded from the English standard of merit. By far the finest double Cinerarias are from Swanley, and Mr. Cannell also stages his fine pyramids of cut flowers of Zonal Pelargoniums, together with the Pride of Penshurst Carnation freely arranged in vases, and effective they are rising above the massive purple and crimson Cinerarias. Kalmias and Andromedas are well represented, some specimens of A. japonica very fine indeed.

Imantophyllums contribute powerfully to the brightness of the Exhibition, and they shine the more conspicuously in contrast with the Palms that at once form a background and a canopy to the several collections. No such display of the plants in question has ever been seen in England as is now under notice in the Great Hall of Harmony at Ghent. It is not suggested that distinctly marked improvements are conspicuous since the last exhibition five years ago, but those on view are good enough to satisfy the critical, and especially since the cultivation is so good, the foliage being as broad, stout, and deep green in colour as the trusses are large, and the flowers well formed and brilliant in colonr. Among the more striking are Baronne de Rothschild, Madame Freeman, Mr. Harry Veitch, Madame Donner, Lindeni, a grand specimen from M. Charles de Vuylsteke ; F. Vervaene, and Madame Auguste Lemoine.

Bromeliaceous plants are much more numerous and fine than are seen at the best home exhibitions, and when well grown, are not only handsome, but constantly so, for when the flowers fade the leaves remain, and these, with the character of the plants, are highly ornamental. One or two new varieties command much attention, notably Vriesia hieroglyphica variegata, which was awarded the first prize as a novelty in the section. In addition to the rich marbling of the leaves, each is banded on one side with white, and the contrast with the darker portions is most effective. It is doubtful whether the variety will be reproducible by seed, and if not its increase must of necessity be slow ; be that as it may, the plant in question is one of the most striking novelties in the Exhibition. The plant to which the second prize is adjudged is remarkable by its massiveness and the red hue prevailing in its exceptionally broad leaves, which are 9 inches in diameter and about 2 feet long. It is exhibited by Madame D. Block of Brussels as an introduction from Brazil. M. de la Devansaye stages an interesting plant, the result of a cross between V. Zahni and V. splendens, and named V. magnifica—a stately plant of considerable promise. Messrs. Jacob Makoy & Co. and Count P. Heptinne are very successful in this section.

Anthuriums.—These, chiefly A. Schertzerianum, are exhibited in large numbers, and as arranged in bold groups contribute greatly to the richness of the Exhibition. M. de la Devansaye offered a gold medal for seedlings, but this gentleman stages the most distinct that came under our notice, the spathes varying in size and shape and distinctly marbled. The gold medal for the finest collection is won by M. De Smet-Duvivier. Gloxinias are extremely fine for the time of year, and the medal for them is well won by M. L. Delarue-Cardon. Tuberous Begonias from M. Jean De Kneef were also exceptionally meritorious.

Amaryllises contribute materially to the effect of the Show, several collections being staged, but the great superiority of the Veitchian group of about a hundred plants could not be disputed. The flowers by their size, substance, and excellence of form created almost a sensation, and several of the plants will not find their way back to the home of their birth again. It is not too much to say that the Chelsea-raised seedlings exhibited by Messrs. Veitch are a generation, not of plants, but of men, in advance of the Belgian collections, and in these plants more distinctly, perhaps, than any others in the Show England leads the way. And, speaking of English plants, it may be stated that as Messrs. Veitch take the lead with Amaryllises, so does Mr. B. S. Williams with Cyclamens, for though there are other meritorious collections in the Show, the Holloway plants are clearly in the ascendant.

M. Alexis Dallière wins the chief medal for striped and marbled foliaged plants, Vriesia Leopoldi, and V. tessellata, splendid, with Aphelandra Louisa, the narrow Privet-shaped leaves clearly veined with ivory white on a very dark ground. All the plants in the group represented superior cultivation. M. Louis van Houtte is a close second in this fine class. Dracænas are remarkable for high culture rather than great size, and never before were seen the green and golden D. Lindeni in such numbers and condition. M.M. Vancoppenolle and D'Hacne well deserve their medals for these collections.

Orchids.—In no section has such a great advance been made in the five years that have elapsed since the last Show as in these. Then they were the weak point, now they are a strong feature. Not that the plants are large, as we have individual specimens much finer at home, but the Belgian exhibits are undeniably most attractive, the plants, as a rule, being in excellent health and profusely flowered. M. L. De Smet-Duvivier exhibited a truly charming assortment, with which it would be difficult to find fault, while the choicest varieties are included. Apart from these, an annex of the building is entirely filled with Orchids, these being artistically arranged on curving side stages, backed with mirrors disposed at acute angles, but it is doubtful if these contribute materially to the general effect. The stages are edged with neat wicker-work 6 inches high, which gives a neat finish to the rich banks of flowers. A central stage is also occupied with plants, and there are overflow collections (notably a very rich one, from M. Hye-Leysen, in which Cypripedium grande (Veitch) has "tails" 10½ inches long) in an adjoining corridor, also in a glass structure in the grounds. To enumerate the varieties would fill a page, and as they are generally the same as are grown in England, and some of the plants are recognisable as having been seen there, it is the less necessary to particularise, and if a commencement is made of taking down names it might not be easy to know when and where to finish. A truss, however, of Cattleya Trianæ variety from M. Sidney Courtauld is so distinct from all others that it cannot be passed in silence. The feature of the flower is that the deep colour of the lip is reproduced as a broad clear stripe up the centre of the petals and sepals, this being as distinct in its way as the band in some of the Amaryllises. This similarity led a jocular spectator to astonish an inexperienced friend by informing him it was the first cross yet obtained between the two genera, and he appeared to be delighted with the information.

Cypripediums are especially well grown, though the plants are not large, being mostly in 5 and 6-inch pots. M. Hye-Leysen stages a beautiful collection, which is awarded the premier prize, C. Argus Moensi being the most conspicuous flower in the group ; but more conspicuous still is what some consider a sport staged by the same exhibitor from C. Lawrenceianum, the marbled foliage of which it retains, but the flower is totally dissimilar, the lip being soft greenish yellow, the colour running up in stripes three parts through the dorsal sepal on an ivory white ground. It is most chaste, and bears the varietal name of Hyeanum.

M. Peeters, Brussels, wins the Queen's medal with a large and admirably grown collection of Orchids, which includes many superior forms, as Lælia purpurata alba, one of the best ever seen, Cœlogyne cristata alba, Odontoglossum Ruckerianum superbum, very fine ; Cypripedium Sallieri and C. Sedeni candidulum very good. Dendrobium Ainsworthi is in excellent condition, as are all the plants, and the group is very beautiful.

Hyacinths are raised tier above tier to form steep banks of trusses, the pots embedded in and covered with moss. The growth is not so vigorous as the best English grown Hyacinths, though there are some massive trusses, the appearance of which might be improved by a little dressing for liberating some of the bells and disposing them evenly for rendering the trusses more symmetrical. Tulips are small, and would not take a third prize at a good show at home.

Forsythia suspensa, trained on an umbrella frame, several plants planted together and the stems encased in clay, this being sown with Cress seed to form a green stem, is one of the curiosities of the Show.

A dwarf white Rhododendron, Rosalie Siedel, ought not to be overlooked ; it is very attractive and floriferous, being destitute of any central blotch of colour, only the top petal containing a few dark spots.

Mr. Brown, Richmond, scores a great triumph with his bouquets and table decorations, winning the two gold medals offered in the classes, with rich yet very light and tasteful examples of floral arrangement. When it is added that Mr. Veitch is granted a large gold medal, also the object of art offered by Madame Verschaffelt in memory of her husband, for the splendid group of Amaryllis ; that Mr. B. S. Williams secures the gold medal of 200 francs for Cyclamens ; and that Mr. Cannell is awarded a silver medal for his exhibit above referred to, it will be conceded that the English contingent did well, as the gentlemen named were the only exhibitors from Britain. It is interesting to record that Mr. Veitch was surprised by being handed a gold medal that was granted in 1863, or twenty-five years ago, for new plants exhibited by his father ; it was struck at the time but overlooked.

A most interesting feature in connection with the Exhibition is a fac-simile illustration of the first show held by the Society in a public house in 1809 (at least that is the date of the old Dutch newspapers that are laid on the tables), for the public house and its furniture are represented as well as the plants. At one end is the bar, with mugs, pewter pots, and glasses, and by their side is the tub for washing them. In the centre is a table with the brazier that was used for lighting the pipes of the old Dutch gardeners, these being also on the beam, near the ancient barometer, with the names of the smokers on some of them. There are two other small tables and cane chairs, with a candlestick fastened down to each of the tables for safety perhaps at critical moments, and on the other side of the room is the table of plants—the exhibition. There are between fifty and sixty of them, besides a small collection of Hyacinths and Tulips. The reproduction of this old show was a happy idea, and is admirably carried out, even to the sanding of the rough deal floor. The old man's name is over the door—B. C. Lanckman, Hovenier ; (market gardener)—and each of his customers took a plant, these making the show. When the past and present are thus brought together the difference is astounding—the first show resembling a cottager's exhibition, the last being the greatest held in Europe during the present year.

The hospitality dispensed by the administration to the Jurors is remarkable. The luncheon on Saturday amounted to a banquet, attended by 200 to 300 persons, then followed a splendid reception at the Hotel de Ville, then as a grand finale a sumptuous banquet in the saloon of the Grand Theatre, followed by a special operatic performance in honour of the occasion. The Comte de Kerchove de Denterghem presided at the banquet, which was a splendid one, and his sprightly eloquence was received with enthusiastic applause. The city is *en fête*, and in every respect the gathering is a brilliant success.

The weather, which had been bitterly cold for a long time in Belgium, similar indeed to that which has prevailed in England, changed on Friday last, which was mild and bright, while Sunday was summer-like and

beautiful. The sea is now calm, and if it remains so, as does not appear unlikely, there is just time for English visitors who can find it convenient to do so, to inspect such a show as can only be seen in Ghent. We hear that some gentlemen are sending their gardeners, and they can leave London on Friday night, arriving in Ghent on Saturday in ample time to see the Exhibition before it closes at night, and there is much of interest to attract besides the Exhibition. The admission to the Exhibition on Saturday is 1 franc (tenpence). English visitors stay chiefly in the Hotels de la Poste, Royal, and Vienne, and though these are full now, there will be daily departures from to-day (Monday) onwards, making room for new arrivals.



THE LATE M. J. M. GONOD OF LYONS.

LYONS has to mourn the death of another of its principal rosarians in the person of M. J. M. Gonod, who died at Monplaisir, Lyons, on the 12th of March last, at the age of sixty-one years. It was only in November last that we lost M. F. Lacharme, at the greater age of seventy years. These men were two of the most distinguished Rose growers of the district; they were both raisers, and both large cultivators, but M. Lacharme was best known as a raiser of novelties, and M. Gonod as a general cultivator. When at Lyons, in June of last year, I spent a long morning with the former (an old friend), and an afternoon with the latter, and little thought that I was conversing with both for the last time. M. Lacharme communicated to me his intention of resigning the general cultivation of Roses this year, and confining himself exclusively to the raising of seedlings. On referring to my note-book I find I thought highly of two different seedling yellow Tea-scented Roses not then named, the one much in the way of Comtesse de Frigneuse, but apparently superior to it. I lingered long before a lofty wall running the whole length of his garden, and which was covered from top to bottom with glorious flowers grown expressly for bearing seed. This was truly a magnificent sight, and remains fresh in my memory. Turning to M. Gonod I find I thought well of his recent issue, Baronne de Fonvielle (Tea-scented), a very sweet coppery-yellow Rose splashed with lake. He had one piece of 50,000 dwarf Roses budded on the Dog Rose, and the growth and bloom surpassed everything I had previously seen at Lyons. I had known him before, and left him with the impression that I had been in company with an earnest, industrious, and clever man.—WM. PAUL, *Waltham Cross, Herts.*

ROSE HEDGES.

PARAGRAPHS have been going the round of the papers with regard to the employment of Roses as hedges on continental railways, and the *Daily Telegraph* recently gave the following interesting details:—"Excellent opportunities have been afforded to continental railway companies by the unusually heavy snowfalls of the past winter for testing the efficacy of the various means devised by experienced engineers for the protection of their 'permanent ways' against snowdrifts. Of all the results hitherto obtained by experiment in this direction the most satisfactory have been rendered by Rose hedges fringing either side of the railway line. The Rose tree exclusively utilised for these fences is that popularly known as the 'rosier de la Provence.' In Lower Hungary, where the iron road traverses long stretches of flat country, akin in conformation and aspect to the Russian steppes or to the prairies of Western America, hedges of Rose trees, thick and tall, cover both flanks of the snow-beset metals, and repel the fiercest onslaughts of their fleecy foe. On the State railways of the Banat, in the outlying regions of Magyarland, a section of the line nearly a mile and a half in length, which in former years invariably became blocked by the snow, has been kept clear during the abnormally heavy falls of the past winter by one of these double Rose hedges, averaging 6 feet 6 inches in height and about 3 feet in thickness. This stout bulwark—in summer time bisecting the dusky "puszta" with twin-streaks of gay green, aglow with rich colour and redolent of sweet fragrance—has successfully withstood the fury of the snow-laden tempests which have of late repeatedly swept over Eastern Europe, enwrapping thousands of square miles of territory in a cold white mantle, of such density and weight that whole villages and countless homesteads have vanished for the time being under its frozen folds.

"Although, no doubt, strictly practical considerations have suggested the planting of these avenues of Rose bushes which have been instrumental in keeping open an arterial line of communication between Central and Eastern Europe throughout some of the severest weather experienced for many a year past, the expedient adopted by the Hungarian Staatsbahn for protecting its traffic against interruption bears a romantic aspect that might well furnish a theme to poetical inspiration. It requires but little imaginative effort to picture to the mind's eye a summer's journey gladdened by the glory of Roses, shining to the right and left of a swiftly gliding steam chariot, while the surrounding atmosphere is fraught with faintly subtle scents which superinduce a soft languor in the fortunate traveller. Such sights and odours have hitherto been rarely allotted to tourists dependent upon railway locomotion for their transport through strange countries. They may be found in the plains of Persia, where 'Roses are bright by the calm Bendemeer,' and in the Roumelian lowlands, adjoining the southern and eastern slopes of the rugged Balkan range. Between Tatar Bazar and Adrianople the horseman following the post-road on a sultry June day rides mile after mile through enormous Rose plantations blazing with scarlet and crimson, and giving out odours well nigh as overpowering as that of the attar distilled from their gorgeous blossoms. In those fields of queen flowers he may gaze his fill on 'the Damask Rose, whose rare mixture doth disclose beauties pencils cannot feign.' The uncounted millions of Roses grown in Roumelia are not merely turned to account by the Rose farmers for sale to the preparers of that powerful essence which, enclosed in long, slender, carefully stoppered bottles lettered with gold, is still so popular throughout the East, although it has quite gone out of fashion in this country. Many tons' weight of their leaves, gathered and packed whilst they are freshly fallen, are converted into Rose jam, one of the exquisite conserves which, under the generic name of 'dulchatz,' are so admirably confected in Turkey, Greece, and Roumania, and constitute a leading feature in the light but toothsome refection offered to the casual visitor in every well-to-do Oriental household. Rose jam, considered as a sweetmeat, is far superior in flavour and savour to Rahat Lakoum, and to the somewhat cloying preparations of angelica for which Stamboul confectioners are justly famous. It is by no means sickly, or even insipid, as those delicacies unquestionably are, but is characterised by an after-taste no less brisk and refreshing than that of the Black Cherry 'dulchatz," paragon of all Turkish sweets.

"There is but little hope that English railway lines will be hedged in by belts of Rose trees, with a view to guard them against the encroachments of the drifting snow, or in order to gratify the eyes and noses of British excursionists with infinite varieties of colour and faintly perfumed airs. It seems, however, that much might be done to render many of our iron roads—or at least their immediate surroundings—less monotonously hideous than they are at the present time. The bare slopes of embankments and cuttings alike might often be planted, tastefully, and not unprofitably, with trees and underwood. Where the track passes through a level district it might be enclosed with green hedges, sufficiently hardy and close in texture to stay the driving snow in winter time, and solacing to the traveller's gaze when dressed out in their summer garb of verdant leaves and wild flowers. Railways, it may be said by doctrinaires of the Gradgrind school are meant for use, not for ornament. Granted; but we would venture to observe that their decoration with flowers in no respect impairs their utility, whilst rendering them manifestly less unattractive than they would otherwise be. Englishmen who have travelled through Southern Germany, the Austrian Duchies, Bohemia, and the Tyrol will remember with pleasure the pretty gardens and shady groves attached to many of the humbler provincial stations in those countries; the trellised Vines and gracefully trained creepers, the gay beds and borders of hardy annuals, the devices in growing flowers of bright hues, the well-kept kitchen gardens on upward and downward inclines hard by the lines of rails, wherever the soil is of a sufficiently fertile character to permit of that class of cultivation."

BIRMINGHAM SPRING FLOWER SHOW.

THE eighth annual Exhibition of the Birmingham Chrysanthemum and Spring Flower Show Society was held in the Town Hall on the 11th and 12th inst., the entries being much in excess of previous years, and necessitated staging many plants in the galleries.

Orchids were well represented. In the class for twelve, Mr. Barnes, gardener to Mr. Charles Winn, Selly Oak, Birmingham, staged an excellent collection, which contained fine examples of Odontoglossum Rossi rubellum, Cypripedium villosum superbum, Cœlogyne cristata Lemoniana, and Cypripedium caudatum. Second, Mr. A. W. Wills, Wyldes Green, Birmingham, who had Cypripedium lævigatum and Cymbidium Lowianum especially good. Third, Mr. A. Powell, gardener to Mr. G. H. Kenrick, Edgbaston, having Dendrobium formosum and Odontoglossum citrosmum both good, also O. citrosmum album and Phalænopsis Stuartiana.

In the class for six Orchids, Mr. Cooper, gardener to the Right Hon. Joseph Chamberlain, M.P., staged superb plants, consisting of grandly flowered Dendrobium Wardianum and Oncidium Marshalli, Cattleya Trianæ delicata, Odontoglossum Alexandræ, Cœlogyne cristata, and Dendrobium chrysanthum. Mr. Charles Winn took the second prize, and had good examples of Cattleya Mendelli and C. Trianæ formosa. Besides these classes other Orchids were staged. Mr. Jinks, gardener to J. E. Wilson, Esq., Widdington, Edgbaston, had a magnificent Dendrobium nobile, nearly 4 feet through and densely flowered, a plant of Phalænopsis Parishii with quite thirty blooms, and other Orchids. Mr. C. Winn also set up a group, not for competition, in which were Cypripedium Argus, Odontoglossum luteo-purpureum, and some Masdevallias. In the class for three Orchids Mr. Cooper, Highbury, was first with Dendrobium Wardianum, D. Jamesianum, and Cymbidium Lowianum. Second, Mr. Charles Winn, and in this collection was a fine pan of Odontoglossum Rossi majus. Third, Mr. A. W. Wills.

Mr. Cooper staged, not for competition, a group of plants which included some of the new Imantophyllums, exhibited in Birmingham for the first time, of which Marie Reimers is one of the finest. Some good Spiræas were shown, Mr. G. Showell taking the first prize. Excellent Deutzias took the first prize, shown by Mr. J. Crook, gardener to W.

Milward, Esq. Second, Mr. W. H. Dyer, gardener to Mrs. Marigold. One or two exhibitors sent grand plants of both Deutzias and Spiræas in bud, but not open—a thorough waste of time and trouble to the exhibitor.

The three Ferns which took the first prize were most creditable to the grower, Mr. Caldecott, gardener to Mr. William Mathews, Edgbaston, comprising two excellent Gleichenias and a very fine Todea superba, Three grand plants, and so healthy and well done. In the class for six stove and greenhouse plants Mr. A. Brassien, gardener to Sir Thomas Martineau, exhibited six excellent plants—viz., Acacia armata, Rhynchospermum jasminoides, Dendrobium nobile, Erica Cavendishiana, Franciscea calycina, and Imantophyllum miniatum, and Mr. Dyer was second. Mr. Crook took the first prize for six splendid specimen Azaleas, and Mr. Cooper was first for three Azaleas, exceedingly well-grown plants. The last named was also first for Roses in pots, grand in foliage and size of blooms, Tea varieties; and first for six hardy Rhododendrons. A striking feature of the Exhibition were three very fine Cytisuses, one a pyramid quite 6 feet high and 3 feet through at the base; the others, two grand standards, with stems 3 feet high and heads 3 feet by 3 feet, and all densely bloomed and admirably grown.

Messrs. Perkins & Son, Coventry, were first in the nurserymen's class for a tasteful bouquet, and Mr. H. Weiss first in the amateurs' class with a bouquet of considerable merit. In the class for twelve bunches of stove and greenhouse cut blooms, Mr. Marriott, Coventry, was well first; and in this exhibit were superb trusses of Rhododendrons Maddeni alba and Princess Royal, Erica Victoria Regina, E. Holfordi, Aphelexis macrantha purpurea, Darwinia fuchsioides, and Erica Cavendishiana. Mr. Cooper was a good second, and his collection contained a very fine seedling Amaryllis, Cattleya Trianæ, Cymbidium eburneum, and Dendrobium Wardianum.

Hyacinths in pots were well exhibited, and in many instances very good. In the class for eighteen Mr. J. Morgan was first (the prize in this class being given by Mr. T. B. Thomson, seedsman.) In the class for eighteen Hyacinths, Mr. F. Cooper, gardener to Charles Showell, Esq., was first. For twelve Hyacinths, Mr. W. H. Dyer was first, and also for six. Double and single Tulips were in great force, Mr. Dyer's first prize, six singles—viz., Proserpine, White Pottebakker, Keisers Kroon, Duchess of Parma, Chrysolora, and Joost van Vondel, were good, but in many other instances good culture was a characteristic. Polyanthus Narcissi and Cinerarias were also exhibited. There were capital table plants, the first prize going to Mr. A. W. Wills for light and elegant plants. The class for six pots of Lily of the Valley were well filled by well grown and flowered plants. Mr. W. Brown, first; Mr. E. Cooper, second; and Mr. A. W. Wills, third. Auriculas were few, Mr. J. Crook and Mr. Spittle being the two exhibitors. Messrs. Pope & Son had six Gold-laced Polyanthuses, to which the first prize was awarded—viz., Exile, Lancer, Prince Regent, William I., Cheshire Favourite, and a seedling of Mr. Hewitt's.

Amongst the honorary exhibits special praise must be given to Mr. Thos. Ware, Hale Farm Nurseries, and Messrs. Peter Barr & Son, King Street, Covent Garden, for grand banks of cut Narcissi in great variety and tastefully displayed. In Mr. Ware's collection some of the most striking were Emperor, exceptionally large; pallidus præcox, Golden Spire, Henry Irving, Horsefieldi, several groups and very fine; cernuus, cernuus Exquisite, distinct and good; Blondin, Rip Van Winkle, a very curious, serrated, small double variety; Capax fl. pleno, a very distinct, small, double; cernuus fl. pleno, sulphureus fl. pleno, one of the finest of the doubles; and spurius coronatus, one of the finest of all. This collection numbered 260 bunches. Messrs. Peter Barr & Son's collection although not quite so large, contained many rare varieties. Dr. Hogg is a beautiful and distinct variety; Horsefieldi, incomparabilis Beauty, Barri, Miriam Barlow, are all fine; Barri conspicua is a noble flower, pale lemon, with orange and yellow cup; Incomparabilis Sir Watkin (the Welsh Peerless Daffodil), is a beautiful variety; J. G. Baker is another very distinct and beautiful variety; Emperor, Leedsi, Duchess of Westminster, incomparabilis Princess Mary, and maximus Golden Daffodil, should be in all collections; and for a curiosity at once very distinct and pleasing cyclamineus must be named, it is very dwarf growing, and the calyx turns directly back, and the entire flower has an elongated tooth-like appearance. In front of this group were bunches of Chionodoxa, the double and single An mone fulgens, and other spring flowers.

The local nurserymen came out strongly. Mr. W. Spinks, the manager of Hans Niemand's Nurseries, set up a most artistic group of plants, in which as a central object was a very fine Ananassa sativa variegata, set in a centre bed of Asparagus plumosus nanus, which Mr. Spinks propagates by division to keep it true. Variegated Funkias were used, also Lycopods, Isolepis, Draccenas, Crotons, Palms, Erica ventricosa coccinea minor, Amaryllis, &c.: it was a lovely group. The same firm had beautiful sprays in variety, in which Bouvardia and Odontoglossum Alexandræ were chiefly used. Mr. T. B. Thomson, nursery and seedsman, had a corresponding group of great beauty, with a background of Palms, and choice plants in flower and ornamental Crotons, Draccenas, &c., running through the group; and here again a pattern design was worked out, as in Mr. Spinks's group, by the use of Muscari botryoides, Anemone fulgens, Narcissus Bulbocodium, and other plants. This firm also set up a fine bank of Hyacinths, Tulips, and a fine strain of Cinerarias, and a large memorial anchor of great beauty, which was very much admired. Mr. Vertegans, Chad Valley, contributed alpine plants in miniature rockeries, and a handsome bouquet of Narcissi, as well as two baskets of this flower prettily arranged.

Messrs. R. Smith & Co., Worcester, contributed a charming display of young plants of Clematis in small 48-sized pots, chiefly well bloomed, and what beautiful objects they are in this state for decorative work, also a goodly lot of berried Aucubas. Mr. Robert Sydenham, Tenby Street, set up a stand of Hyacinths, well grown plants, with long full spikes, of the leading varieties showing excellent culture, and Messrs. Perkins and Son, Coventry, sent a memorial wreath, a very fine one, a copy of one made by them by order of the Germania Club for the late Emperor of Germany's funeral. Mrs. Thewles, florist, New Street Station, contributed some lovely sprays, in which fine blooms of Fancy Pansies were used, and had a telling appearance. Horticultural accessories, such as rustic work and garden frames, were also exhibited.



A FRENCH ELECTION OF CHRYSANTHEMUMS.

A RECENT issue of the *Moniteur d'Horticulture* gives the results of an election of Chrysanthemums in France, in which 847 voters took part. The fifty varieties which obtained the highest number of votes were the following incurved and Japanese:—

No. of Votes.		No. of Votes.	
731	Mme. C. Audiguier	389	Source d'Or
726	Triomphe de la rue des Châlets	383	Mdlle. Lacroix
689	Gloire Rayonnante	382	M. Freeman
671	Erectum superbum	376	Marquise de Mun
653	Souree d'Or	374	Aimée Ferrière
640	La Triomphante	368	Ratapoil
626	Richard Larios	363	Mdlle. Cabrol
607	Margot	356	La Pureté
585	Marguerite Marroueh	351	Val d'Andorre
561	Yellow Dragon	349	Criterion
557	Empress of India	332	Hiver Fleuri
532	Fabian de Mediana	331	Mme. Boucharlat (Bouch)
498	Belle Paule	330	Edouard Audiguier
469	Don Quichotte	324	Jeanne Délaux
457	Queen of England	322	Cullingfordi
454	Jardin des Plantes	319	Dr. Besaueèle
448	Peter the Great	317	Bras Rouge
446	Timbale d'Argent	307	M. Moussillac
433	Jeanne d'Arc	301	L'Adorable
426	Empress Eugénie	293	Aurore Boréale (Delaux)
422	Comte de Germiny	289	Golden Eagle
407	Princess of Wales	286	L'Ile des Plaisirs
405	Fair Maid of Guernsey	270	Ville de Toulouse
401	Rubrum striatum	269	Boule d'Or
391	Elaine	258	M. Theodore Bullier

Most of these are well known in Great Britain, but an election here would result very differently.

THE NATIONAL CHRYSANTHEMUM SOCIETY.

THE schedule of the above Society for 1888 is just to hand, and in some measure is an exemplification of the rapid advance of this Society in recent years. It forms a substantial publication of sixty-eight pages, giving lists of patrons, officers, Committees, Fellows, members, and affiliated societies, the latter now numbering thirty-nine. The report for the preceding year and financial statement, together with lists, winners of medals and prizes at the metropolitan shows, and those of affiliated societies.

The schedules of the four exhibitions to be held by the Society this year give full particulars of all the classes and prizes offered. The first is that for early Chrysanthemums, Dahlias, and Gladioli, to be held on September 12th and 13th at the Royal Aquarium, Westminster, the Judges being for Chrysanthemums, Messrs. R. Dean and G. Gordon; for Dahlias, Messrs. Henshaw and Drain, sen. The chief metropolitan Show is fixed for November 7th and 8th; also at the Royal Aquarium, the Judges being for plants, Messrs. Donald and G. Prickett; for fruit and vegetables, Mr. A. F. Barron; for incurved blooms, Messrs. J. Douglas and G. Gordon; for Japanese blooms, Messrs. E. Molyneux and E. Beckett; and for miscellaneous blooms, Messrs. L. Castle and W. G. Head. A considerable amount is offered in money prizes besides gold, silver, and bronze medals as leading awards in several cases. The special class for Chrysanthemum and horticultural societies, in which a challenge trophy and £10 in money are offered for a collection of forty-eight blooms, twenty-four incurved in not less than eighteen varieties, and twenty-four Japanese distinct, is already exciting much interest. Classes for fruit and vegetables are provided as usual.

One of the events of the November season will be the Provincial Show of the National Society, to be held in conjunction with the annual Show of the Sheffield and West Riding Society in the Corn Exchange, Sheffield, on November 16th and 17th. The Judges selected are, for plants, Messrs. T. Garnett and G. Gordon; for incurved blooms, Messrs.

R. Dean and J. Wright ; and for Japanese blooms, Messrs. L. Castle and J. Udale. Seventy-four classes are enumerated. a good proportion of which are open to all exhibitors. A class of special interest is that provided for the best representative collection of large-flowering Chrysanthemums, not more than twelve blooms of any section, the following or any part of them being included, Incurved, Japanese, reflexed, Japanese reflexed, large Anemone, and Japanese Anemone, the first two in distinct varieties, the other four in not less than six varieties each, or more than two blooms of any variety. The first prize is a cup value fifteen guineas and £10 in cash, with second and third prizes of £6 and £4. The other London Show will be held on January 9th and 10th, the Judges being Messrs. R. Dean and G. Gordon, Mr. W. Holmes acting as Referee at all the Society's London Exhibitions. The dates of the Floral Committee meetings, of which seven will be held at Westminster, are also given. Schedules can be obtained from the Hon. Secretary, Mr. William Holmes, Frampton Park Nursery, Hackney.

JAPANESE REFLEXED CHRYSANTHEMUMS.

THE Revision Committee (Messrs. Lewis Castle, George Gordon, and Harman Payne) appointed by the National Chrysanthemum Society to tabulate and arrange the returns for the new catalogue, have prepared the following list of Japanese reflexed as a guide to growers intending to compete in the new classes provided for these varieties.

It must be pointed out that the varieties named as Japanese reflexed are only excluded from the true reflexed class, they can be shown in all the Japanese classes as before. Nearly two-thirds of the thirty members of the Committee have named varieties they consider should be classed in the new section, and a total exceeding sixty varieties have been thus mentioned. The following twenty-four have obtained the highest number of votes, and will form the select list recommended by the Committee for exhibition. They are arranged in the order of merit as determined by the votes, and those that are also specially adapted for culture as specimen plants are indicated by an asterisk.

*Etaine, *Maiden's Blush, Triomphe du Nord, *Dr. Macary, La Triomphante, L'Adorable, Magdeleine Tezier, *M. Astorg, Amy Furze, Jeanne Délaux, Père Délaux, M. John Laing, *Val d'Andorre, *M. Henry Jacotot, *Flambeau, Gorgeous, *La Nymphe, Criterion, *L'Africaine, *Roseum superbum, Phœbus, *Margot, *Wm. Holmes, and *Tendresse.

A few have advocated transferring Cullingfordi to the Japanese reflexed section, but the majority are in favour of its retention in the true reflexed class.

ROYAL BOTANIC SOCIETY.

APRIL 18TH.

THE Royal Botanic Society can hardly be said to be favoured in the matter of weather as a rule, and the occasion of their second spring Show was no exception. It is true that there were some glimpses of sunshine, but the greater part of the day was showery. The aspect of the corridor on a spring show day is familiar to many readers of this Journal, and on the present occasion there were fine banks of stove and greenhouse plants from Mr. B. S. Williams ; Roses from Paul & Son of Cheshunt, Rumsey, &c., with Cyclamens, Daffodils, Cinerarias, Pelargoniums, and hardy plants from various exhibitors.

Alpine and Herbaceous Plants.—Alpines were an open class, with no restriction as to the number of plants to be shown. Mr. James Douglas, gardener to F. Whitbourn, Esq., Great Gearies, Ilford, and Messrs. Paul & Sons, The Old Nurseries, Cheshunt, being the only exhibitors. The former had fine pots of hardy Primulas, including villosa nivea, sikkimensis, viscosa major, and the charming rosea, Anemones, Hepaticas, Auriculas, Polyanthuses, &c., and scored a deserved victory. There was greater variety in Messrs. Paul's second prize group, comprising the intensely rich Gentiana verna atro-cærulea, Saxifragas Burseriana and Sancta, Soldanella minima pallida, and some fine plants of Primula nivalis and Narcissi, amongst other interesting features. An interesting collection of hardy herbaceous plants was shown by Mr. T. S. Ware of Tottenham. The class was an open one, and there was no specified number to be shown. Large pans of the pure white Trillium grandiflorum, Iris reticulata, Androsace carnea, Anemone blanda, Iris pumila cærulea, light blue, with a variety of Primulas, &c., were the most admired features of his collection, which secured the first prize. No other was shown.

Roses in Pots.—Messrs. Paul of Cheshunt won with nine plants, their specimens being far ahead of the others shown. The beautiful blush Tea, Madame de St. Joseph, the creamy Innocente Pirola, and the soft rose Souvenir d'un Ami were finely shown ; also Catherine Soupert and Leon Renault amongst the Perpetuals. Mr. W. Rumsay, Joyning's Nursery, Waltham Cross, followed, his specimens being neat and well flowered, notably Miss Hassard, Duchesse de Vallombrosa, and Catherine Soupert. No first prize was awarded in the class for six plants, the only exhibitor, Mr. P. Perry, gardener to W. G. Rowlett, Esq., The Woodland, Cheshunt, showing but moderate examples. The second prize was given.

Amaryllises.—Here Mr. Douglas was again to the fore. Twelve plants were asked for, and Monarch, Albert Victor, Hector, Rembrandt, and Juno were finely shown ; other varieties represented being Enchantress, Empress of India, Jupiter, and Lady Hulse. Messrs. Paul and Son, Cheshunt, had fresh and richly coloured specimens, all seedlings, some of which will probably be heard of by-and-by, and secured a ready second, the remaining prize falling to Mr. Butler, gardener to H. H. Gibbs, Esq., St. Dunstan's, Regent's Park, who showed creditably, but of course suffered by comparison with the great growers named.

Cinerarias and Pelargoniums.—Messrs. H. Cannell & Sons, Swanley, were the most successful with nine Cinerarias, the excellence of their strain being manifest in the larger size, shapeliness, and rich colour of the abundant flowers. Mr. Douglas's second prize plants were more freely flowered, but less meritorious from the florist's point of view ; Mr. Phillips, gardener to R. W. Mann, Esq., Langley Broom, Slough, showing densely bloomed but small-flowered plants for third prize. The last-named was more successful with Pelargoniums, being adjudged the premier award for healthy specimens of unmistakeable decorative value, Digby Grand, Duchess of Bedford, Duchess of Edinburgh, and Rosette being excellent. Mr. Kemp, gardener to H. Barry, Esq., Bushill House, Winchmore Hill, was fortunate in meeting no opposition for the second prize, his plants by no means doing him justice. S

Azaleas.—Mr. R. Scott, gardener to Miss Foster, The Holme, Regent's Park, was first for six plants in the amateurs' class, showing several well flowered but one or two weak plants, Mr. H. Eason, gardener to B Noakes, Esq., Hope Cottage, Highgate, being second. For the remaining group (shown by Mr. R. Butler), a certificate was recommended. Mr. C. Turner, The Royal Nurseries, Slough, was first in the corresponding class for nurserymen, having small but densely flowered specimens of Mdlle. N. van Houtte, Madeleine, Roi d'Hollande, Apollo, Mrs. Turner, and Baron de Vriere. Mr. Robert Wells, Longton Nursery, Sydenham, and Mr. Henry James, Castle Nursery, West Norwood, took the remaining prizes, but their specimens were not such as to call for comment.

Messrs. H. Lane & Sons, Berkhampsted, had the field to themselves in the class for twelve plants of Azalea mollis, and showing in their well-known style, were deservedly awarded the first prize. They also showed Rhododendrons in very fine condition, and were placed first, no others competing, though strong opposition would have been needed to defeat the Berkhampsted growers.

Auriculas and Polyanthuses.—Mr. James Douglas followed up his successes in previous classes by a highly creditable victory in the class for twelve show Auriculas, distinct. The varieties shown were Sir W. Hewett, Neatness (a green-edged seedling), Ajax, Frank, Charles J. Perry, L'Abbé Liszt, Marmion, Conservative, Glory, Acme, and two unnamed seedlings, the one a fine purplish violet self after the character of C. J. Perry, the other a green-edged variety with very large pips and well worthy of a name. Mr. C. Turner, The Royal Nurseries, Slough, was second, his best flowers being Beauty (Traill), Colonel Champneys (Turner), and C. J. Perry (Turner). Mr. A. J. Sanders, gardener to Viscountess Chewton, Bookham Lodge, Cobham, took the remaining prize. Messrs. Turner and Douglas changed places with Alpines, the former being distinctly in advance of his old rival. Edith and Tennyson carried fine pips, and Diadem, Mrs. Thomson, and Symmetry were also well represented in the collection, which comprised several seedlings of promise. Mr. Douglas was first with Polyanthuses ; Mr. J. Odell, Goulds Green, Hillingdon, following.

Miscellaneous.—Mr. Turner was awarded a bronze medal for a beautiful box of cut Tree Carnations. Mr. J. Chambers showed two dozen pots of his fine double dark blue Violet Victoria, which were much admired. Messrs. Paul & Son, Cheshunt, showed a larger and very fine group of Roses in pots, for which a silver medal was recommended, and Mr. Rumsey received a small silver medal for an attractive group of the same popular plants. Messrs. Lane & Sons staged a splendid group of Rhododendrons, and were adjudged a large bronze medal. Daffodils were shown in immense variety by Messrs. Barr & Son, Covent Garden (small silver medal), T. S. Ware (large bronze medal), and Collins Bros. & Gabriel (bronze medal), and were, as might be expected, very much admired. Messrs. Cannell & Sons showed a collection of double Cinerarias, which ought to be more grown, Rawson's White Violet, Primula elatior platypetala plena, and Sempervivum cordatum, a distinct succulent with bronze-tipped leaves. Messrs. W. Cutbush and Sons, The Nurseries, Highgate, London, N., were represented by a group of Epacrises. Mr. Odell received a large bronze medal for a fine group of Cyclamens, and a bronze medal was awarded to Mr. W. Hibburt, gardener to W. Clay, Esq., Kingston, for another attractive group of these favourite flowers.

A mixed group of flowering and foliage plants from Mr. W. Kemp was adjudged a bronze medal. Mr. B. S. Williams of the famous Holloway Nurseries staged a splendid group of indoor plants. It included the graceful Ferns Adiantum Williamsi and A. gracillimum, Cattleya Skinneri, Ada aurantiaca, Cypripedium Boxalli, and Oncidiums undulatum and luridum, which were noteworthy amongst the Orchids, and a plant of Dendrobium infundibulum bearing a solitary flower, large, almost transparent, with an orange throat was also remarked. Glonera jasminiflora, a Brazilian plant with Bouvardia-like trusses of pure white flowers, and Arpophyllum giganteum with long spikes of rosy inflorescence, were noteworthy amongst more familiar plants. A silver medal was awarded to this fine group.

Plants Certificated.—Botanical certificates were awarded to the following—Puschkinia libanotica compacta, shown by Mr. Ware ; Oncidium undulatum, Anthurium Scherzerianum atro-sanguineum (a very richly coloured form), Cordyline australis variegata, and Selaginella euspidata crispa from Mr. B. S. Williams.

The following were awarded floricultural certificates :—Double Violet Victoria (Chambers), referred to above ; double Cinerarias Rosina, Aspasia, rich violet blue ; and Faust, rosy red (Cannell) ; Amaryllises Monarch and Albert Victor (Douglas) ; Aspasia, Exquisite, and

Thackeray, splendid flower, deep crimson (Jas. Veitch & Sons); Alpine Auriculas Marmion and Emperor Frederick (Douglas); Pedigree Rose Duchess of Rutland, soft pale rose, good form, and Polyantha Rose minutifolia alba, exceedingly free, flowers white, as large as a florin (Bennett); Cyclamens Lord Hillingdon and Dixon Hartland, conspicuously blotched (Odell); and Narcissus bicolor J. B. M. Camm, and Leedsi, Duchess of Westminster (Barr).



FRUIT FORCING.

VINES.—*Planting Vines.*—This is the best time for planting young canes. We prefer the borders partly within and partly outside, planting the Vines inside the house. For very early forcing the borders are preferably inside, otherwise we do not advocate confining the roots in this way. The border should be concreted at the bottom; unless it has a substratum of gravel or other porous substance, rubble 1 foot thick must be placed on the concrete, and proper drains and outlets provided. Thirty inches depth of soil is ample. Turf 3 inches thick taken off loam friable rather than tenacious, broken up roughly and mixed with a tenth of old mortar rubbish, charcoal, and some crushed bones form a suitable compost, but well-drained and fertile garden soil will grow serviceable Grapes. The Vines were cut back in early winter, and have been kept in a cool house, the eyes now having grown 2 or 3 inches long. Turn them out of the pots, remove every particle of soil, carefully preserving the fibres. Spread the roots out straight and flat, the soil of the border having been brought to the required level, covering the roots to the depth of about 4 inches, working the soil well amongst them with the hand, and giving a good supply of water at a temperature of 90°, mulching with a little short litter. If the canes have not been shortened do not cut them now, but remove the buds from the upper portion down to where fresh growth is desired to issue, and cut away the disbudded part when the Vines have made some leaves, as there is then no danger of bleeding. Six feet width of border will be sufficient to commence with. Sprinkle the Vines and house twice a day, but avoid sharp forcing. Temperatures of 55° at night, 65° by day artificially, and 70° to 75° with sun, are suitable. If the weather be bright and the panes of glass large, shade lightly from 10 A.M. to 2 P.M., when the house should be closed, damping all available surfaces. If the temperature run up to 85° or more it will be an advantage. When the Vines have started into growth give every encouragement, increasing the temperature to 60° to 65° at night, 70° to 75° by day, and 80° to 85° from sun heat.

Young Vines.—Those planted last year are breaking naturally, and may be assisted with gentle fire heat in cold weather. The canes will have been fully depressed so as to cause them to break regularly down to the basal buds, when they can be tied in position. Disbud, leaving the best shoots about 18 inches apart on both sides of the canes. Crop very lightly, one or two bunches being the maximum. Any extra Vines planted to fruit early and afterwards to be cut out, may carry a bunch on each; six to eight or more bunches according to the vigour of the Vines.

Early Forced Vines.—In the earliest house red spider may be expected. Paint the return hot-water pipes with sulphur mixed milk so as to form a thin pain. Give the border a thorough watering, mulching afterwards. This refers to the inside border. Apply the water early in the day, so that surplus moisture may pass off before closing time. Early Grapes do not always colour well, the defect arising from overcropping or continued hard forcing; it is only avoided by a constant supply of dry warm air and a low night temperature. Where Grapes are fully ripe a reduction in temperature is advisable, yet moderate moisture should be maintained for the benefit of the foliage. The moisture will not do the Grapes any harm provided the air is changed by free ventilation. Afford a temperature of 60°.

Succession Houses. — Attend to stopping and tying the shoots. Where the space is restricted stop the shoots two joints beyond the fruit, and as foliage is necessary leave the laterals on the shoots both above and below the bunch, or at least those from the two lowmost eyes, and those level with and above the bunch. Pinch these at the first joint, especially those from the basal leaves, also those above unless there is space for extending the laterals, when they may be allowed to make two or three leaves, but no more growth must be encouraged than can have exposure to light and air. After the space is fairly furnished keep the growth closely pinched to one joint as made. Where there is more space stopping will not take place until growth has extended four or more joints beyond the fruit. The great evil is overcrowding, which deprives the foliage of the light and air, and restricting the growths is intended to avoid that.

Tying the side shoots into the places where they are to remain during the summer is an operation which commands much attention. It is a common practice to begin to tie down the shoots as soon as they are long enough to bend. This is not advisable unless as a precaution against injury from frost, as the shoots at this stage are so tender that the slightest twist the wrong way breaks them. It is a better plan to defer tying down until the shoots are less sappy, which may be when the fruit is formed, but a better plan still is to so dispose the rod that the shoots, instead of having to be brought down to a nearly horizontal position, will have a good incline upward, yet sufficiently outward or oblique to admit light to the basal leaves of the shoots. Afford Muscats in flower a free circulation of rather dry air, and a temperature of 80° to 85° or 90° by day, falling to 70° or 65° at night, raising the points of the bunches to the light, and liberate the pollen at midday by gently rapping the footstalks of the bunches. If there is a deficiency of pollen take it from those that afford it plentifully, as Black Hamburghs, and apply it to the shy-setting varieties with a camel-hair brush.

Where there is a large quantity of Grapes to be thinned commence as soon as they are out of bloom with the free-setting varieties, such as Black Hamburghs; and some, like Gros Colman, Gros Guillaume, Trebbiano, &c., may be thinned whilst they are flowering. Follow it up early and late, and on dull days. Surplus bunches may be removed boldly, as overcropping proves fatal to colour and finish. Crops swelling must have a liberal supply of heat and moisture, and the inside borders well supplied with water or liquid manure.

MELONS.—The fruits of the earliest plants are growing large, they must have the supports lowered. Frequently stop the laterals, or thin them where they are crowded. Supply water or liquid manure liberally to plants on which the fruit is swelling, but avoid excess of liquid manure, which may injure the roots, and the fruit in consequence will not finish satisfactorily. Plants coming into flower should only have water to prevent flagging, and a drier condition of the atmosphere is essential to a good set, especially so in the case of very vigorous plants. Attend regularly to the setting of the blossoms. Stop the shoots, however, one joint beyond the blossoms when impregnated, but after the fruit is set remove all superfluous growths. Avoid giving stimulants to plants until the fruit is swelling, when liquid manure may be afforded liberally, especially to plants carrying heavy crops, until they are well advanced towards ripening. Maintain a night temperature of 70°, 70° to 75° by day, and 85° or 90° with sun heat. Ventilate freely in favourable weather, closing early with plenty of sun heat, when the plants may be syringed lightly, except such as are in flower. Watch for canker at the collar, and rub it out with fresh slaked lime when it makes its appearance.

CUCUMBERS.—These have made good progress lately, and require attention in tying out the growth, stopping one or two joints beyond the fruit, removing bad leaves and exhausted growths so as to maintain a succession of healthy fruitful shoots. Water plants in houses abundantly, and with weak liquid manure about twice a week, syringing the foliage and walls daily about 3.30 P.M., when the house can be closed. Shade only to prevent flagging. Those plants in pits and frames will hardly need shading as yet, but they must not be allowed to flag. Use tepid water through a rose watering pot at about 3 P.M., closing the lights at the same time, but as the nights are yet cold, be careful that the foliage becomes dry before night. Close early, employing a good thick night covering. Maintain a good bottom heat by linings, renewing them as necessary. Preserve a night temperature of 70°, 70° to 75° by day artificially, 80° to 85° from sun heat, ventilating from 75°, being careful to avoid cold and drying currents of air, and close sufficiently early to run up to 90° or more with plenty of moisture in the house. Sprinkle available surfaces in the evening occasionally with liquid manure, or fresh horse knobs sprinkled on the surface of the bed will answer the twofold purpose of evolving ammonia to the benefit of the foliage, and supply nutriment to the soil, as well as encouraging surface roots. Pot ridge varieties, keeping these and other young plants near the glass.

FLOWER GARDEN.

Herbaceous Borders.—Very few plants in these are far advanced in growth, and it is not yet too late to lift and divide any that have developed into strong spreading clumps. The strong-growing gross-feeding Delphiniums, Phloxes, Potentillas, Pyrethrum uliginosum, Asters, Japanese Anemones, Geums, Helianthuses, Hemerocallis, Tradescantias, and Rudbeckias, may be lifted, divided up with a fork and replanted in fresh well-manured soil, and be greatly improved thereby. Strong clumps of dwarf Pyrethrums may also be split up and replanted with advantage, but the majority of the more weakly growers ought not often be disturbed. The Flag Irises can be moved and divided readily now, and Narcissi may be transplanted prior to flowering better than when at rest, flowering next season quite as well as this. Carnations, Pinks, Pentstemons, Antirrhinums, Phloxes, Pansies, Pyrethrums, and all extra choice hardy plants wintered in pots under glass ought now to be sufficiently hardened off, and should therefore be planted out as soon as the weather permits. Mix plenty of leaf soil or short manure with the soil intended for choice, or they may not take readily to their fresh quarters. Now that nearly all the bulbous plants are well through the ground, the borders may have a quantity of short manure forked into the surface, this greatly benefiting the established plants as well as any annuals that may be sown or planted among them. If not already done sow a few seeds of Mignonette and Sweet Peas in 5-inch pots, these to be eventually planted in the mixed borders for an early supply of cut bloom.

Hardy Ferns.—Most of these can be transplanted when in full growth, but they are best divided just as active growth commences, or at the present time. It follows that now is also a good time for forming a new fernery. All thrive admirably in a rather shady position, but ought not

to be unduly shaded by trees. Those species with creeping or rhizomatous stems thrive best when in contact with large stones and old tree roots, but the Athyriums, Lastreas, Polystichums, Scolopendriums, many of the Polypodiums, and the Osmundas grow most vigorously in ordinary soil with or without stones. It is advisable, however, to mix plenty of peat or leaf soil or both, as well as lumps of sandstone with the soil for hardy Ferns generally, for the purpose of giving them a good start. Keep the commoner rank growers in the background as much as possible, or otherwise they will soon smother the choicer and more weakly growing species and varieties.

Lily of the Valley.—These pay for good cultivation. Starved and crowded together the spikes are poor and not very plentiful, but given good room and fairly rich soil fine crowns are formed and large spikes of bloom follow. Part or the whole of a bed may be lifted now, freely divided, and the crowns thinly replanted in well manured finely separated soil. A rather cool border suits them well, and the strongest of the crowns ought to be planted about 3 inches apart each way and just covered with soil. Finish off with a mulching of short manure or leaf soil, and a surfacing of the former may well be given to undisturbed beds. Replanting crowns does not interfere with their flowering the same season, and it eventually leads to the formation of good clumps or crowns for forcing.

THE BEE-KEEPER.

QUEEN INTRODUCTION.

"A Hallamshire Bee-keeper," at page 288, still holds to the opinion that the main point of safe queen introduction has never been grasped by any writer on bees.

Unlike your correspondent, I never read Huber nor Réaumur, nor indeed any bee book, for the first thirty years of my bee-keeping life, and but very few since then, the *Cottage Gardener*, now *Journal of Horticulture*, being my favourite paper, and the only one in which I found ideas worth treasuring. My only book of instruction has been the book of Nature. The great hindrance to the advance of bee husbandry is "unjust" criticism in certain quarters, and the unfair practice of pirating others' ideas, which naturally arouses jealousy. How much better would it be if all would draw honestly together!

That my friend has wrought out his ideas given in this Journal without the knowledge of what has been written on the subject I do not doubt, and but for his interposition to settle a point of importance in queen introduction would have been seized upon by someone. I cannot point to any particular number of this Journal containing the imformation, but I am certain it was given. Mr. J. Lowe contributed several long articles on the subject of bee commotion, on bees missing their queen, and although headed "New" it was well known to all advanced bee-keepers before that time. I know your correspondent is unconscious that anything has been previously written on the important point of bees missing their queen before another should be introduced; therefore his articles are just as valuable as if it had not appeared. If he turns to page 58 of my essay to the Highland and Agricultural Society he will see the following remark:—"The only safe method of joining queens is to allow sufficient time to elapse, so that the bees miss their queen." If I have forestalled all other writers in this I must be content, because I see looming in the distance what will or may outstrip me. "A. H. B.-K." has something more to add which will help to insure queens after their enthronement. Mr. T. Bonner Chambers, F.L.S, has already given us a chapter (*vide* pages 247, 248) not only able in detail, but really new—so far that it has never appeared in print at any time previously, although I have, without giving explanations of the reasons, stated the result. It is the most valuable article on queen introduction I have ever read.

It appears we are now on the eve of knowing more about the mysteries that have hitherto been veiled from us. Let us therefore continue in search of knowledge that will enable us to understand successes or failures, and enable us to know when to depose and when to introduce queens with safety in all the different complex phases.

It is perhaps superfluous to note here all the various phenomena that I have observed, further than that I have introduced queens under every known system, and have had success and failures with all of them. Many queens are lost by leaving the hive immediately they are placed into it from the top without previously caging her and closing the entrance, and this takes place in the dark as well as during the daylight. But the most common loss of queens is as described by Mr. T. B. Chambers at page 248, and it has puzzled me much to know the cause of such unnatural phenomena, which is not confined to recently introduced queens, but very often occurs with queens regnant from their birth. I have observed the seeming neglect of the queen as described, and have as often as six times in one season destroyed the royal cells being brought forward preparatory to the deposition of the queen, who receives rough treatment from her daughter subjects, and is at last killed by them, and not by the virgin queens. I cannot say these dethronements always take place because of impaired fertility, because several times have I rescued the reigning monarch, introducing her to another hive, and there she proved herself prolific. One I saved and presented to a neighbour after a determined attack had been made upon her life, and numerous royal cells had been raised by bees and destroyed by me. This queen was safely introduced, and lived for three years.

I am of opinion that the raising of royal cells is owing entirely to faulty combs, the queen not finding suitable cells to deposit her eggs incites the bees to depose her. It is different, however, with those queens recently introduced, and by which more queens are killed than by all the other modes of mishap, the lives of such queens being always in jeopardy after the bees begin to disregard her as their rightful queen. What is the cause of this continued determination? Here is a wide field for research on a topic of the greatest interest and importance to every bee-keeper.

By using the precautionary measures I have advocated so long both in this Journal and privately, the losses when introducing queens will be, as they have been, few in number, but it will be all the better if we can, by a combined effort, discover the real causes of the mysteries that present themselves in various forms under the same as well as different circumstances.—A Lanarkshire Bee-keeper.

TO CORRESPONDENTS

*** All correspondence should be directed either to "The Editor" or to "The Publisher." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Teddington Garden (*Kilternan*).—The particulars required will appear in the next issue of this Journal.

Orchard Houses (*H. R. W.*).—Your letter has been forwarded to Mr. Rivers, and the substance of his reply will be communicated to you. Plainly built structures of this character should not be expensive.

Late Chrysanthemums (*W. D.*).—The blooms sent are fair representatives of the variety, which is evidently a very useful one both for exhibition and decorative purposes.

Hellebores (*F. I.*).—The plants prefer a moist and rather shady situation, but any ordinary garden soil suits them, if not excessively

heavy. Most of the varieties of the H. niger type (Christmas Roses) are best planted in late autumn, but varieties of H. orientalis (Lenten Roses) can be planted in early spring.

Gloire de Dijon Rose Unsatisfactory (*T. J. W.*).—Though the soil was good when the Rose was planted, "seven or eight years ago," it has probably become impoverished now, and the failure may be due to that. Apply a good mulching of old decayed manure over the roots, or give occasional supplies of weak liquid manure. Ventilate the house freely in mild weather, and syringe the plants.

Soil of Vine Border (*A. C.*).—The soil is in a very unsatisfactory condition, and, judging by the appearance of the sample sent we should think the border is not thoroughly drained. However, the course you propose adopting is the best that can be followed this season; but you will probably find it advisable to overhaul and renew the border before it will be restored to a condition favourable to the Vines.

Slugs (*J. E.*).—Apply nitrate of soda to the ground at the rate of 1 lb. to 30 square yards, but before putting in the crops. We have no great difficulty with slugs, as we dress the ground with salt at the rate of 20 bushels per acre in March, or before cropping, and upon any appearance of the slugs we sprinkle the plants and soil about them with quicklime early in the morning or at dusk, repeating the sprinkling as the lime is washed away by rains, or the slugs continue their depredations.

Epiphyllums (*S. Mills*).—Repot them in spring after flowering; or, if they do not flower, in April. Provide good drainage, a compost of sandy fibrous loam and sandy peat in equal parts, with one-fourth of silver sand, pieces of charcoal, broken pots, and leaf soil or old dry cow dung. They are best grafted on Pereskia stocks. Grafting is easily performed by cutting the stock in a slanting direction and putting on a shoot of the Epiphyllum, securing it with a thorn of the Pereskia, tying with matting, and covering lightly with moss. It may be done in spring before growth, or after the growth is complete. Water the plants moderately, but when growing afford moisture, and in winter give water only to keep them fresh. Afford a light airy position, only when growing slight shade is preferable.

Thick-necked Onions (*B. E. W.*).—Various causes contribute to this deformity; one being spurious seed; another a wet, cold, or late situation; and another insects, only the latter evil results in a sort of bladder-like formation rather than a thick neck. In general, if good seed be obtained and sown sufficiently early on dry ground, and the season becomes moderately dry and fine, Onions of proper size and shape will be formed, either large or small as the character of the ground and their cultivation is attended to. But if the situation is damp their growth is prolonged too late in the season, and a number of thick-necked only half-ripened bulbs will be the result. In such places a good dressing of charcoal dust at the time of sowing will be beneficial, in addition to thorough drainage and as much road sand as can be had, or anything that will tend to make the ground drier and more porous.

Destroying Woodlice (*Subscriber*).—The most wholesale mode of riddance is to place some boiled Potato round the inside of the frame or pit on the surface, and cover with a little hay loosely. Do this as a bait for a couple of nights, and in the morning of the second night have some boiled water in a watering pot, and pour it through the spout on the hay around the sides of the pit or frame. This will not do any harm to the plants provided it is not used upon them, or even to their roots, unless used in excessive quantity. It may be necessary to repeat it in the course of a week, which the presence or otherwise of the pests will determine. Some baits formed by placing a boiled Potato wrapped loosely in a little hay in a small flower pot laying on its side near the haunts of the woodlice in the evening, and in the morning shaking the vermin into a bucket of scalding water from the hay in which they will be secreted after or still feeding on the Potato. This persisted in will eradicate them. A toad introduced will devour great numbers, and is an aid in the destruction of woodlice too seldom called into requisition.

Old Nonpareil Apple (*Clericus*).—It is generally allowed that the Nonpareil is originally from France. Switzer says, "It is no stranger in England; though it might have its origin from France, yet there are trees of them about the Ashtons in Oxfordshire of about a hundred years old, which (as they have it by tradition) was first brought out of France and planted by a Jesuit in Queen Mary or Queen Elizabeth's time." It is strange, however, that an Apple of such excellence, and held in such estimation as the Nonpareil has always been, should have received so little notice from almost all the early continental pomologists. It is not mentioned in the long list of the Jardinier François of 1653, nor even by De Quintinye, or the Jardinier Solitaire. Sebabol enumerates it, but it is not noticed by Bretonnerie. It is first described by Duhamel and subsequently by Knoop. In the Chartreux catalogue it is said "Elle est forte estimée en Angleterre," but among the writers of our country Switzer is the first to notice it. It is not mentioned by Rea, Worlidge, or Ray, neither is it enumerated in the list of Leonard Meager. In America it is little esteemed. The Scarlet Nonpareil was discovered growing in the garden of a publican at Esher, Surrey, and was first cultivated by Grimwood of the Kensington Nursery.

Weevils in a Vinery (*G. Potts*).—The insect is a weevil, Curculio picipes, which is very injurious in a vinery. Spread a sheet beneath the Vine at night, and shake the Vine rod sharply, when the weevils will fall on the sheet, and may be destroyed. This repeated a few times will thin their numbers. We presume the Vines were stripped of their loose bark, and afterwards dressed in the usual manner, the walls being whitewashed. Any holes in the wall should be stopped with cement. The tobacco juice from the manufacturer diluted with six times its bulk of water is useful, applying it through a rose watering pot; also the following:—4 ozs. quassia chips, boiled ten minutes in a gallon of soft water, dissolving in it 4 ozs. softsoap. Wet the surface of the whole house with this two or three times, especially near the walls, just after dusk, and the following day damp the whole house with tepid water. Neither of the agents mentioned must be applied to the foliage of the Vines, but over any plants that will not be injured by the softsoap it may be syringed. We have also found sprinkling the floor of the house and border with guano, and then with water, useful; if the floors are wet, sprinkling with water afterwards is unnecessary. If the Vines are in tender leaf a little ventilation should be left on, as the ammonia evolved will scorch the leaves. Water well in the course of two or three days.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*B. R. T.*).—1, Acacia armata; 2, Anemone fulgens; 3, Anemone nemorosa; 4, Asplenium Adiantum-nigrum. (*W. O.*).—1, Dirca palustris; 2, Daphne Mezereum; 3, Daphne Mezereum album; 4, Daphne Laureola; 5, Selaginella Kraussiana; 6, Davallia canariensis. (*R. W. M.*).—1, Corydalis solida; 2, Chionodoxa Lucilliæ; 3, Scilla siberica.

COVENT GARDEN MARKET.—APRIL 18TH.

PRICES as last week, with the exception of Strawberries, which are easier. Business steady.

FRUIT.

	s.	d.		s.	d.		s.	d.		s.	d.
Apples, ½ sieve	2	6	to	4	6	Oranges, per 100	2	0	to	5	0
Nova Scotia and Canada barrel	10	0		18	0	Pears, dozen	3	0		6	0
Cobs, 100 lbs.	45	0		0	0	Pine Apples, English, per lb.	0	0		0	0
Grapes, per lb.	3	6		6	0	St. Michael Pines, each	3	0		5	0
Lemons, case	10	0		15	0	Strawberries, per lb.	4	0		8	0

VEGETABLES.

	s.	d.		s.	d.		s.	d.		s.	d.
Artichokes, dozen	1	0	to	2	0	Lettuce, dozen	0	9	to	1	3
Asparagus, bundle	3	0		0	0	Musbrooms, punnet	0	6		1	0
Beans, Kidney, per lb.	1	6		0	0	Mustard and Cress, punt.	0	2		0	0
Beet, Red, dozen	1	0		2	0	Onions, bunch	0	3		0	0
Broccoli, bundle	0	0		0	0	Parsley, dozen bunches	2	0		3	0
Brussels Sprouts, ½ sieve	3	6		4	0	Parsnips, dozen	1	0		0	0
Cabbage, dozen	1	6		0	0	Potatoes, per cwt.	4	0		5	0
Capsicums, per 100	1	6		2	0	,, Kidney, per cwt.	4	0		0	0
Carrots, bunch	0	4		0	0	Rhubarb, bundle	0	2		0	0
Cauliflowers, dozen	3	0		4	0	Salsafy, bundle	1	0		1	6
Celery, bundle	1	6		2	0	Scorzonera, bundle	1	6		0	0
Coleworts, doz. bunches	2	0		4	0	Seakale, basket	1	3		1	9
Cucumbers, each	0	4		0	7	Shallots, per lb.	0	3		0	0
Endive, dozen	1	0		2	0	Spinach, bushel	1	6		2	0
Herbs, bunch	0	2		0	0	Tomatoes, per lb.	1	0		1	6
Leeks, bunch	0	3		0	4	Turnips, bunch	0	4		0	6

PLANTS IN POTS.

	s.	d.		s.	d.		s.	d.		s.	d.
Aralia Sieboldi, dozen	6	0	to	12	0	Fuchsia, dozen	0	0	to	0	0
Arbor vitæ (golden) dozen	12	0		24	0	Genista, per dozen	6	0		12	0
Arum Lilies, dozen	6	0		12	0	Hyacinths, dozen	5	0		10	0
Azalea, dozen	24	0		42	0	Hydrangea, dozen	0	0		0	0
Cineraria, dozen	6	0		10	0	Lilies Valley, dozen	18	0		24	0
Cyclamen, dozen	12	0		24	0	Lilium lancifolium, doz.	0	0		0	0
Dielytra, per dozen	12	0		18	0	Marguerite Daisy, dozen	9	0		12	0
Deutzia, per dozen	6	0		9	0	Myrtles, dozen	6	0		12	0
Dracæna terminalis, doz.	30	0		60	0	Narciss, per dozen	8	0		10	0
,, viridis, dozen	12	0		24	0	Palms, in var., each	2	6		21	0
Erica, various, dozen	9	0		18	0	Pelargoniums, dozen	12	0		18	0
,, ventricosa	18	0		24	0	,, scarlet, doz.	6	0		9	0
Euonymus, in var., dozen	6	0		18	0	Poinsettia, dozen	0	0		0	0
Evergreens, in var., dozen	6	0		24	0	Solanum, dozen	0	0		0	0
Ferns, in variety, dozen	4	0		18	0	Spirea japonica, doz.	9	0		15	0
Ficus elastica, each	1	6		7	0	Tulips, dozen pots	6	0		9	0
Foliage Plants, var., each	2	0		10	0						

CUT FLOWERS.

	s.	d.		s.	d.		s.	d.		s.	d.
Ahutilons, 12 bunches	3	0	to	6	0	Lily of the Valley, 12 sprays	0	6	to	1	0
Anenome (Fulgens), 2 bunches	3	0		6	0	Marguerites, 12 bunches	2	0		6	0
Anemones (French), 12 bunches	1	6		4	0	Mignonette, 12 bunches	3	0		6	0
Arum Lilies, 12 blooms	3	0		6	0	Narciss, white (French) 12 bunches	3	0		6	0
Azalea, 12 sprays	0	6		1	0	Narcies, various, 12 bchs	3	0		6	0
Bouvardias, bunch	0	6		1	0	Pelargoniums, 12 trusses	1	0		1	6
Camellias, 12 blooms	1	0		4	0	,, scarlet, 12 trusses	0	6		0	9
Carnations, 12 blooms	1	0		3	0	Primroses, 12 bunches	0	9		1	6
Chrysanthemums, 12 bchs.	0	0		0	0	Primula (single), bunch	0	0		0	0
,, 12 blooms	0	0		0	0	,, (double), bunch	0	9		1	6
Cyclamen, 12 blooms	0	6		1	0	Roses, Red, 12 blooms	2	0		6	0
Daffodils, Double, 12 bchs	2	0		4	0	,, (indoor), dozen	3	0		4	0
,, Single, 12 bchs	1	6		3	0	,, Tea, dozen	1	6		4	0
Daisies, 12 bunches	2	0		4	0	,, red, dozen (French)	1	6		3	0
Epiphyllum, 12 blooms	0	4		0	6	,, yellow	3	0		6	0
Eucharis, dozen	3	0		6	0	Snowdrops, 12 bunches	0	0		0	0
Gardenias, 12 blooms	3	0		6	0	Spiræa, bunch	0	6		1	0
Hyacinths, French, 12 bunches	1	0		2	0	Stephanotis, 12 sprays	6	0		9	0
Lapageria, coloured, 12 blooms	1	0		1	6	Tropæolum, 12 bunches	2	0		3	0
Lilium longiflorum, 12 blooms	4	0		6	0	Tuberoses, 12 blooms	1	6		2	0
Lilies, White, 12 bunches	0	0		0	0	Tulips, dozen blooms	0	6		1	0
,, Orange, 12 bunches	0	0		0	0	Violets, 12 bunches	0	8		1	0
						,, (French), bunch	1	0		2	0
						,, (Parme), bunch	2	0		3	0
						White Lilac, per bunch	5	0		6	6



FAULTS IN FARM MANAGEMENT.

"WHAT we want is higher prices for our farm produce," said a worthy old farmer at a meeting which was held to discuss the cause and possible remedy of the agricultural depression. Of course we do want higher prices, but how any sensible person can hope to get them passes our comprehension. To begin with, we may take it for granted that every sensible farmer knows the reason of the steady reduction in value of the produce of his land, and anyone to go on hoping and waiting for better prices is tantamount to owning himself a simpleton. Very wisely do Messrs. Sutton say in their recent Farm Seed Catalogue that "Agricultural prosperity or depression are not consequent upon good or bad seasons only, but that Indian and American railways, improved steamboats, and cheapened cablegrams have revolutionised the agricultural position. Farmers are settling down to the altered state of affairs, having become convinced that in the reduction of expenses is to be found the salvation of agriculture." Sound and wholesome advice is this, Messrs. Sutton, we grant, if taken with a grain or two of common sense, for we hold that even under the depression economy is only justifiable as applied to keeping under wasteful expenditure. We hardly need remind our readers how persistently we have striven to show that the best way to overcome difficulties arising from the agricultural depression was to get more out of the land, and in order to do this we were bound to see if the general practice of imparting the necessary elements of fertility to the soil to promote the fullest possible development of our crops was correct or otherwise. Well, we are free to own we found it very much "otherwise," and as we were able, step by step, to discover and set right faults in our own practice, so have we striven to assist our readers in doing so too.

Of faults arising from ignorance we may very safely cherish hopes of improvement, but what can we venture to say about those which are owing solely to carelessness? Take, for example, that important branch of agriculture included under the comprehensive term Dairy Farming. Surely we must term it carelessness upon the part of those having the management of the cows, or the dairy, if the milk, cream, butter, or cheese are not of the best? Why is it that the butter from a certain farm commands a higher price than any other butter in that particular district? Simply because it is the best. We know a certain farmer at the present time who is a shrewd man of business, and who is blessed with that "pearl above price," a good wife and clever manager, who is gradually taking the lead in supplying dairy produce to the inhabitants of a town where it is notorious that what is termed the milk business is overdone. But then no "sky blue" milk ever comes from his dairy; his milk is delivered to his customers in sealed bottles at the same price as other dealers sell it without such security, and the butter and cream are alike excellent. But success does not rest solely upon dairy management, for if the cows are not well bred, well fed, and well cared for in every way, the efforts of the best dairy woman in the world may be exerted in vain. We cannot, of course, go into details of management here, but we may insist upon the high importance of close attention to every detail as exercising an influence upon final results.

Turn now to corn-growing. How frequently are we told that Wheat-growing has ceased to be profitable in this country. May we not qualify this assertion, and say rather that careless practice in Wheat-growing is no longer possible, and that in order for it now to afford a margin of profit not one link in the chain of sound practice must be wanting? We have only to turn to the results of sound practice last year for proof of this. Upon a mixed soil farm in our own hands we had a field of white chaff red Wheat, where the yield per acre was 7 quarters of marketable grain and 2 tons of straw. Now the best price obtained by us in open market before the end of last year for Wheat was 32s. per quarter, and for straw 50s. per ton, and it is therefore reasonable to take such prices as a basis in the calculation of possible results which we now make. Of grain we have 7 quarters at 32s., equal to £11 4s., and 2 tons of straw at 50s. equals to £5, or a total per acre of £16 4s. We are fully aware that this result is altogether above the average, but we are bound to insist that it is possible upon all really good Wheat land. Was there any reason to induce one to hold over much Wheat into the new year? Certainly we did not think so, for we had disposed of almost all our Wheat before last Christmas, and we know that 30s. or less per quarter has been the highest price since then. To retain Wheat in stack without an object is certainly wrong. Mice, rats, and rooks are after it all winter. It is true enough vermin may be held in check, but this is not always done, and we know at the present time three large Wheat stacks so badly infested by rats that there is a perceptible depression in the roof of one of them from the ravages of rats beneath it.

WORK ON THE HOME FARM.

So favourable has the weather been for work on the land that there has been practically no hindrance to the use of the corn drills from morn till dewy eve daily, and we were delighted to hear a light-land farmer whose occupation covers an area of nearly a thousand acres, say on the 11th instant that he had sown all the Barley and the greater part of the Mangold seed. Now this is quite as it should be, for we were all kept waiting week after week by winter in spring, and no time should be lost in sowing spring corn, Clover, Sainfoin, mixed seeds for alternate layers, Lucerne, seeds for permanent pasture, Mangolds, and Swedes. One word about Lucerne. We may usefully remind our readers that it is quite one of our best forage crops. We have now experienced three years of drought, of which trying period we hope last year was the climax, and throughout that time the best forage crop of all was clearly Lucerne. Nor is it difficult to see why it was the best, for it sends its roots down so deep into the soil as to be practically unaffected by drought. Under generous treatment it gives an early spring growth, and it gives successional growths continuously throughout the summer. It is eaten freely by horses, cows, and sheep, and may be made into excellent hay or silage, and it ought certainly to be grown much more extensively than it is. In a hot, dry summer the sight of pasture parched and browned by drought is a sad one, but Lucerne is never so affected, and the crop of succulent green food which it affords under such adverse conditions is invaluable. If a sowing of spring Tares has not been made no time should be lost in sowing sufficient for the requirements of sheep, horses, cows, and pigs, for they are all fond of it. We have frequently finished our lambs for market in folds upon Tares, and we hardly know whether to give preference to Tares or Sainfoin for such a purpose. Perhaps Tares should have the preference, because they may be grown upon all kinds of soil, but Sainfoin is not so amenable to general culture, yet where it can be had it is to be highly valued as affording two crops of great abundance every summer. The first may be eaten off or made into hay, and the second is always available for a supply of seed if it is required, and the plant may remain upon the land for three or four years.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE. 1888. April.	9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of soil at 1 foot.	IN THE DAY. Shade Temperature. Max.	IN THE DAY. Shade Temperature. Min.	IN THE DAY. Radiation Temperature. In sun.	IN THE DAY. Radiation Temperature. On grass	Rain
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 8	29.984	35.9	33.3	N.E.	38.8	42.3	31.5	29.7	25.7	—
Monday..... 9	30.017	38.9	35.2	N.W.	38.3	44.1	31.0	33.6	23.1	0.049
Tuesday 10	30.065	38.7	35.0	N.	38.3	43.1	30.5	33.2	25.4	0.034
Wednesday .. 11	29.896	42.6	42.0	W.	38.2	53.7	38.2	35.7	32.2	—
Thursday 12	29.834	42.9	39.4	W.	39.2	54.5	37.6	31.2	30.6	0.027
Friday 13	29.766	53.8	50.2	W.	40.2	61.9	41.8	111.1	40.3	—
Saturday 14	29.964	50.8	47.6	N.W.	42.7	61.0	43.4	100.1	37.3	—
	29.932	43.4	40.4		39.4	51.5	36.3	90.7	30.7	0.114

REMARKS.

8th.—Frequent slight showers of soft hail in morning; fine afternoon and evening.
9th.—Fine, and frequently bright day; showery in evening.
10th.—Fine and bright early; shower of soft hail about 10 30 A.M., then generally dull.
11th.—Dull and drizzly till 11 A.M., and cloudy till 2 P.M., then bright and fine.
12th.—Dull and damp early; cloudy day.
13th.—Bright and warm.
14th.—Cloudy till noon, then bright.

The two halves of the week have been markedly different. The first three days were colder than is usual in January, while the last two were such as are usual at the beginning of May. Sharp frosts on grass on 8th, 9th, and 10th.—G. J. SYMONS.

BELGIAN WORK AND WAYS.

AS has been seen by the sketch report of the Ghent Quinquennial Exhibition last week, somewhat different methods are adopted in the conduct of shows in Belgium from those in operation in this country. Horticultural exhibitions are presumably held every year in the thrifty little kingdom on the eastern side of the North Sea, but only once in five years is a great effort made to provide a show on a gigantic scale and of international character. The distinctive term, however, applies more forcibly to visitors who are invited to officiate as jurors than to exhibitors. It is true there are nsually a few competitors from England, Holland, and France, but their exhibits bear no comparison in point of numbers with the representative horticulturists who share in granting the honours, and who receive such a warm and hospitable reception. It is not that the services of so many adjudicators are absolutely required for apportioning the medals, for less than forty competent men would do the work as well as the 140 who were summoned. The chief object of the managers of the shows in question appears to be to gain the co-operation of men who will spread the fame of Belgian horticulture over all the world. It is not easy to conceive how any better plan could be organised for achieving the object than the one in operaton, and which experience has doubtlessly proved answers its purpose well.

"Do the Ghent Shows, which of necessity involve a heavy expenditure, pay?" asks the Secretary of a British horticultural Society. Without knowing anything whatever about the balance-sheet of the Society which organises the "Quinquennials," it may be suggested that if the Shows did not "pay" they would not be continued. But they have to be considered not as bringing grist to the mill of a Society, but as of far wider scope and significance—namely, attracting the attention of the world to the horticultural resources of the kingdom and expanding the great trade that is there established in plants. Horticulture is not so fully recognised as an industry in England as it is in Belgium, where official patronage is bestowed and effective aid rendered both by municipalities and the Government to the chief exhibitions. Grants are made by the State towards the promotion and extension of the industry in question, and also in the interests of agriculture, whereas in England whatever of advance may be made or improvements effected must be the result of individual enterprise. As an instance of State aid in the work of cultivation, any farmer in Belgium who is desirous of gaining information that may be of service to him has the right to summon to his assistance a Professor, or, as he is termed, an Agricultural Engineer, who is paid by the Government not only to initiate experiments on the land with chemical manures and various trial crops, but the manures and seeds are provided free of all cost to the applicants. This is a step in advance of a very practical nature, and as the plan is being put into action the results can scarcely fail to be of substantial benefit to the community in increasing the productiveness of the soil. In that way the nation will be undoubtedly enriched by the outlay that is invested in the work. So, too, is it enriched by the disbursements made in the cause of horticulture, as in the case of the great exhibitions that are periodically held in Ghent, which is the chief seat of horticulture of the kingdom, two or three hundred nurseries being established in the city and suburbs. The great gatherings cannot be held without a large sum of money being brought into the country and left there, while the sales effected in the nurseries are very considerable. If not directly, then, not the less certainly, are the great shows profitable to the nation, and the outlay incurred in providing medals and banquets is regarded as a safe and sound investment.

As entertainers the Belgians are pre-eminent. There is of necessity and properly trade rivalry there as elsewhere, but when the time comes for dispensing hospitality and creating an impression all join in the object, and appear to vie with each other in striving for the success they deserve so well, and which they do not fail to secure. So striking and even brilliant were the receptions accorded on the occasion in question, that one of the British representatives, and not the least enterprising and successful, was troubled amidst the joyousness, because he felt that no adequate return could be made in this country of a similar nature, at least at the present time, but he hoped the time would come when the Royal Horticultural Society would be in a position to take the lead in a gathering that would be worthy of the nation.

It is to be noted that Belgian horticulturists possess besides the spirit of enterprise the virtue of patience. They have learned not only to labour, but to wait. Their policy is evidently to gain strength by an accumulation of resources. They do not make a number of small attempts and fail, but concentrate their energies on great efforts at wide intervals and command universal attention. State grants could not be obtained every year, as these are consequent on and governed by individual contributions. If the means at disposal were expended yearly the shows would be five times less in importance and not more than mediocre in character. In that case little would be heard of Belgian horticulture, for it would be essentially local instead of, as now, of world-wide celebrity. Great interest is manifested in Belgium in the Royal Horticultural Society of England, and some of the experienced continental workers delicately suggest that perhaps the English Society attempts too much, dividing its resources unduly and depriving itself of power. Perhaps our friends over the water, who do things so well, are not far wrong; anyway, that view of the position may be recorded, as it cannot possibly do harm if it does no good.

The contributions to the Belgian horticultural societies are not high. A guinea constitutes membership, though special donations are given for special purposes. Moreover, the societies do not stand alone, but are in almost every case amalgamated with musical societies. When each of these, harmonic and horticultural organisations, stood apart both were weak, but by association each became strong, or much stronger than before. Obviously it does not follow that a similar alliance is practicable in England, for it is probable that there are few, if any, harmonic societies corresponding with those established in the chief cities of the Continent; still, the circumstance must be narrated in a passing allusion to Belgian work and ways.

If we could emulate our friends in waiting and gathering strength, then unite our forces as they do, we could excel them in the magnitude and richness of our exhibitions, taking them in the aggregate, though in some of their productions they are in the ascendant; and we might then, as they do now, invite representatives of culture from various countries, and make London, for the time being, the centre of attraction in the horticultural world. We could, at least, give a hearty English welcome, and if it differed from that accorded in Ghent, would not, perhaps, on that account, be the less agreeable. One thing we could not very well do, since we have no State aid and State railways—gain a 50 per cent. reduction in fares for jurors travelling on the lines to and from the exhibition. That is a "way" they have in Belgium of showing courtesy to the friends who are officially invited to take part in great exhibitions like the Quinquennial at Ghent.

It is pleasant to observe not only continued, but evidently increased, prosperity in the horticultural industry of Belgium. The demand for plants of a decorative nature is greater than ever, and some kinds, notably Azaleas, Palms, and a few other

ornamental plants, appear to be grown more quickly and cheaply than in England. They are grown to be killed in the windows and halls of cities and towns, and they answer the purpose, room being constantly made for more; and so the demand continues, and the supply is commensurate with it. Wages are lower in Belgium than in England, and the hours of labour are longer there than here, while the activity of the men employed in the nurseries denote that they take no small interest in their work. Belgium is a hive of industry, and at the least ten times more men, women, and children, besides bullocks and dogs, are seen working on the land than can be found on a given area in this country, where the oxen chew their cud in laziness, and dogs are luxuries and not labourers.—A JUROR.

CULTURE OF THE DOUBLE VARIETIES OF PRIMULA SINENSIS.

[A Paper by W. H. Divers Ketton Hall, Stamford, read at the Meeting of the Scottish Horticultural Association, May 7th, 1886]

I SELECTED this subject for my lecture for the following reasons. The double Primula is the most useful plant we have here for winter flowering, as by growing about 300 plants we can always rely on having plenty of white flowers from November to April. I think in a few years when its culture is better understood this plant will be largely grown by most persons who have a supply of flowers to maintain during the winter months. It does not require such a great amount of heat to flower it in perfection as the Eucharis, Gardenia, and other favourite white flowers. If liberally treated it gives a good succession of flowers which are useful for all ordinary purposes, and by carefully attending to a few chief points in its culture it may easily be grown in large quantities.

Before proceeding any further I may as well state that what is here mentioned refers altogether to the double Primula proper, and not to the semi-double varieties which are raised from seed. They may be useful for some purposes but are no favourites of mine, as I consider either the true doubles or the singles far prettier and more satisfactory in every way.

USES OF THE FLOWERS.—We use the old Double White or alba plena when cut for wreaths, vases, bouquets, buttonholes, and sprays, and the plants when in flower for dinner table, room, conservatory, and church decoration. The newer varieties should be mounted singly for buttonholes and bouquets, and are very pretty and useful for this purpose. They are, however, rather peculiar flowers to wire effectually. The best way is to take a piece of ordinary stem wire, turn a very small hook at one end with the pliers, push the other end down through the centre of the flower and pull it through far enough to be out of sight, wind a small piece of binding wire round the stem lightly, and all is complete. The old Double White is often most useful if wired in whole trusses; this is easily done by strengthening the main stem with a short wire and twisting some binding wire round the small stems of the bunch so as to draw all of them nearer together. They may also be wired singly in the same way as the newer varieties. The binding wire must be very gently placed around them.

PROPAGATION.—The chief reason this plant is not more extensively grown is because it has obtained a bad name with many on account of failures in propagating it, and if it is attempted to strike the cuttings in the same way one would proceed with Verbenas or Heliotropes, for instance, or even like Pelargoniums, failure is almost certain. It is too succulent in its nature to be struck the same way as most plants are treated; at the same time it will not strike under treatment given to ordinary succulent plants. The system I have found to answer best for propagating them may be described as a combination of the two, and by the plan I am about to describe 99 per cent. may be rooted. They require a place to themselves for propagating, a separate case in the propagating house, where such conveniences are at hand, or a propagating case fixed in a Melon or Cucumber house, or some house with a similar temperature, or failing either of these conveniences, a frame fixed on a hotbed is the next best obtainable, and that is probably within the reach of every gardener. The bottom heat should range between 70° and 75°, and may be derived from a heated chamber with plunging material on the top, or failing this, any kind of well-sweetened fermenting material will do which can be depended upon to maintain a steady temperature for four weeks. Cocoa-nut fibre, old tan, or sawdust should be spread on the top of the bed as a plunging material just deep enough to hold the pots.

I have seen it advised in gardening periodicals to strike the cuttings in August and grow the plants about fifteen months before flowering them. But this is a great mistake. There is no necessity to lose a whole season if the plants are struck early and liberally treated. We have had plants of the old Double White struck here the first week in June 18 inches across in the following January, and bearing twenty-eight trusses of flowers in 6-inch pots. I mention this to show that plants may be grown in nine months large enough for all purposes.

The best time for propagating is at the end of April or early in May for those required to flower early in the winter, and the end of June is not too late if they are not wanted before the following February. The old plants should be induced to start growing freely before the cuttings are taken off by keeping them a little warmer, &c. The soil for propagating must consist of one-third leaf mould, two-thirds light sandy loam, and one-sixth of the whole good sharp sand. Take the cuttings with a portion of the old brown stem attached, cut off closely any leaves likely to decay soon, and the remains of the old dry leafstalks, using a very sharp knife, and being careful not to injure the bark on the stem of the cutting. Insert the cuttings as soon as possible after they are detached from the plant, and each one should have a small stake and a piece of matting run from the stake all round the leafstalks and tied, in order to steady it in its place. Give all a good watering before placing them in the propagating case, being careful not to wet the foliage more than is necessary, and as soon as the water has drained off place them in the frame. If this is a propagating case inside a house leave the lights off until all superfluous moisture has evaporated. If the frame is an ordinary one outside, of course this would not be advisable, but the light should be fixed for a time so as to allow a current of air to pass through. This must be stopped before the cuttings commence to flag. It is a good plan to lay a few lumps of charcoal among the cuttings. This helps to keep all sweet and absorbs some of the superfluous moisture.

Provision must be made to keep all sunshine from the cuttings until they are rooted. There are now two dangers to steer clear from. The first is having the atmosphere in the frame too dry and causing the cuttings to flag, which weakens them and delays their progress. The second is a stagnant atmosphere overcharged with moisture. Of the two the last is the greater evil, but the chief point to aim at in order to secure the greatest success is to keep a little ventilation on the case or frame without allowing the cuttings to flag. It is, however, safer to let them flag a little rather than to keep the air confined around them for any length of time, but much depends on the amount of moisture arising in the frame, and the air must be regulated accordingly. If this frame is fixed inside a propagating or other house the lid may often be left open after the ventilators are closed in the house in question, provided it has been well syringed and the sun is not shining directly on the case. During the night, and when the ventilators in the house are open, the lid of the frame should be tilted about a quarter of an inch whenever the cuttings will bear it without flagging, and very often it will be advisable to open the lid wide for an hour or two at six o'clock in the morning after it has been partially or wholly closed all night. But much of this matter of ventilating must be left to the judgment of the propagator. No two cases will require exactly the same treatment. Much depends on the form and character of the house itself, the position and proximity of the hot-water pipes and ventilators, &c., but a person with ordinary intelligence will soon be able to judge for himself. If the frame is an ordinary one outside on a hotbed a similar course must be pursued, only the lights will not require to be open wide as in the other case. Water should be supplied to the cuttings from the spout of a small watering pot when they require it, but in such a way as to avoid wetting the foliage, and on no account must the cuttings be syringed.

I will now briefly allude to another system of propagation which I have practised when circumstances have prevented the cuttings being inserted at the usual time. Prepare the old plants by taking off all partially decayed leaves and remains of leafstalks, &c. Insert the pots containing the plants to be operated upon inside of others one or two sizes larger. Fill the space between the pots with the coarser parts sifted out of the propagating soil, then place some of the soil recommended for cuttings under the branches of the old plant, slightly notch each branch and, if possible, peg it down on to the soil, then place some more of the soil around and over the stems sufficient to cover all the old portion securely, place the pots in a close frame for about four weeks, when the layers may be detached, potted singly, and treated as cuttings just struck. This is perhaps a safer system for beginners, and in most cases it may be advisable for inexperienced persons to retain some of the old plants for this system of propagation the first time they attempt to propagate these plants, to avoid losing their stock in case of a failure in striking, which sometimes happens with beginners; but a rule I consider cuttings by far the best, as they are ready before the shoots are long enough for layering, consequently they have a longer season to grow in and are also less trouble in other ways.

(To be continued.)

FACTS ABOUT GRAPES.

GROS COLMAN.

As far as appearance goes this is one of the noblest Grapes in cultivation, and it is almost needless to add it sells readily in consequence. It is also one of the best keepers, hanging or remaining plump when bottled longer than the Alicante, although it does not equal Lady Downe's in this respect. When well grown it is the finest black Grape, and the berries, besides being large, are firm and fleshy. Unfortunately, if eaten before March or April, the quality is very unpleasant, and not one in a thousand can honestly say they like the peculiar and what has been aptly termed Ivy-like flavour, which only long hanging seems to change. Mr. S. Castle of the West Lynn Vineyard usually succeeds remarkably well with the Gros Colman, and he first drew my attention to the fact that long keeping greatly improves its quality, the berries he kindly sent me last spring and also those we had at the time being much better than I had previously tasted. With us it thrives admirably at the shadiest end of a house of mixed varieties, no difficulty being experienced in securing plenty of bunches to select from, nor in effecting a good set. To do justice to it the rods ought to be fully 4 feet apart, and even this space scarcely admits of the proper development of the laterals. I hold that not less than three primary leaves, or those partially formed before the laterals are stopped, should be beyond each bunch, but it is useless to leave these if there is not room for them to grow out properly.

Plenty succeed with Gros Colman up to a certain point. The bunches may be large and the berries large and regular, but it is the finishing that tells the tale of wrong treatment somewhere. More often than not it is the premature loss of foliage that may safely be blamed for this failure. In other instances the foliage may be sound enough, and yet the berries remain nearer red than black in colour, this perhaps being the result either of overcropping or too much heat, or both together. I find that Gros Colman will not finish off properly nearly so many bunches, nor quite so great a weight of Grapes, as a Vine of Black Alicante of the same age and vigour. It is the weight that tries the Vines rather than the number of bunches, and when deciding how many bunches can safely be left on a rod the relative weights of each variety ought to be taken into consideration. Nor can any general rule as to the number of bunches each Vine should bear be laid down, so much depending upon the state of the border, the quantity of roots to be found near the surface, and the treatment given. With us Gros Colman retains its foliage admirably, but then ours is a renovated vinery with plenty of heavy wooden rafters and sashbars, this being very different to the modern structures, which have very much more glass surface exposed. Those houses constructed of iron and wood are very light and elegant in appearance, but they are the worst to manage. It is in these that red spider is most troublesome, the foliage also being more liable to burn. In such houses Gros Colman ought to be lightly shaded, this being accomplished either with the aid of doubled fish nets or by thin lime water lightly syringed over the roof as often as necessary. Gros Colman is one of the first to show colour in the berries ; but when it is found the rest are much quicker in finishing, those in charge are apt to think something is wrong, and, speaking from experience, be tempted to put on more fire heat or give less air, as the case may be. No greater mistake can be made, as, if not hurried, being also kept well supplied with moisture and liquid manure at the roots, the colouring will go on all the while the foliage lasts, or say till November. The best bunches of Gros Colman I have yet seen were shown by Mr. Jennings, Farnborough Grange Gardens, at the last Reading Chrysanthemum Show. They were grand bunches and beautifully finished, and were not cut from overcropped or much-forced Vines.

LADY DOWNE'S.

If allowed to grow only one late black Grape this should be the variety. It is the very best for potting and keeping till new Grapes are available, added to which it is of good quality any time during the winter and spring months. As a rule the bunches are not large or showy, the majority ranging from 1 to 2 lbs. in weight, but the berries are of good size, very solid, crisp, and refreshing. A vigorous Vine is capable of perfecting a good bunch on nearly every uncrowded lateral, and if not given too much fire heat no difficulty will be experienced in properly finishing the crop. With us the berries are not large, but they are usually as black as they can well be. Unlike the Alicante, the best bunches are formed on the laterals from old wood rather than the young rods, and close pruning may safely be practised.

Others, beside myself, have doubtless found that the young rods rarely break evenly, many buds frequently refusing to move, others perhaps breaking weakly. It is those rods freely shortened at the winter pruning that are the most difficult to manage, these breaking strongly at the ends only. If a long straight rod is desired, this can best be obtained by rapid extension. Planted in a good border a Vine ought to reach the end of a rafter 16 feet long in three seasons. Newly struck Vines usually make the best progress, and our plan is to stop these when about 6 feet long, no winter pruning being resorted to. The following summer they are stopped when the young cane is 7 feet long, and the third season finds them at the top of the house, the knife not having been used either season, with the exception, let me add, of the pruning necessary in the case of lateral growths. These summer-stopped unpruned rods invariably break evenly and well, especially if the points are well depressed or bent round prior to starting, and straight regularly furnished rods are the result. Those who leave an extra length of rod on young Vines must, however, remember that they are not yet capable of sustaining a bunch at nearly every lateral. A bunch on every third lateral is ample for at least four seasons, and if more are left the Vines may be seriously crippled for life.

There is one other serious defect in Lady Downe's that I ought to allude to—viz., its liability to scalding, more especially during the stoning process. The morning sun striking full on the cold berries is apt to damage all those most exposed. I cannot explain this matter in a scientific manner, but I can prevent it, and that, after all, is of the greatest consequence. It is at the ends of the houses where all varieties of Grapes are most liable to scalding, this being observable in the case of any exposed to either the morning or afternoon sunshine, oblique rays evidently being more powerful than those falling in a more vertical direction. Where scalding takes place it must be anticipated by temporarily shading both the roof and the ends of the vineries. When it is the morning sun that does the mischief, early ventilation must also be resorted to, and those houses with the ends facing westwards must not be closed till the sun has lost much of its power. Last season there were many complaints of serious scalding in the case of Muscats, Madresfield Court, and other Grapes, and nothing but judicious shading saved hundreds of bunches.

To our old friend, Mr. W. Taylor, Bath, belongs the credit of producing much the finest bunches of Lady Downe's I have yet seen, these taking first prize at Bath against any variety of black Grapes.—W. IGGULDEN.

DAFFODILS.

I AM watching the progress of some Daffodils which were sent me from Ireland about the middle of June last year. They had been lifted soon after flowering was well over, but before there was much decay of foliage. Some I placed in the border, some in the shrubbery, and though my garden soil is shallow and sandy, it has been cultivated and enriched with loam and well-decayed manure, and the clumps of bulbs have done well and are carrying abundance of buds. Only one sort has as yet perfectly expanded ; a graceful flower ; trumpet pale yellow, somewhat narrow in form, but boldly fringed ; perianth white ; divisions of perianth not very large, but graceful and star-shaped. Altogether these plants are very beautiful, and were greatly admired the other day, especially some I had planted in a sheltered place near some Box trees.

The heavy thunderstorms of Thursday (Primrose Day), and the copious but seasonable rains, sadly besmirched the golden robes of the ordinary Daffodils ; no border plant looking more draggled and utterly suppressed than the once shining Daffodil gleaming in the sunshine, now literally extinguished in mire. I hope to tell you what the others are like shortly.—A. M. B., *Mid-Lincoln.*

AURICULAS.

THERE is nothing peculiar about the present Auricula season except that the flowering period is later than usual. They were held back up to the second week in April by continued cold weather. A change of wind set in about the end of the second week, and then a sudden change took place in the appearance of the plants. They grew rapidly, and the trusses developed faster than I ever knew them to do. We have a collection in a cold frame, where they were merely protected with a mat on cold nights, and these are producing remarkably strong trusses and better developed pips than those grown in a house artificially heated. I fancy if we trusted entirely to growing our Auriculas in cold frames we should not have so much trouble to disestablish the Auricula aphis (Trama Auriculæ). This troublesome pest dislikes to be frozen in the pots.

The introduction of seedling Auriculas is a very slow process unless the variety happens to be free in producing offsets. This may or may not be the case. I have known a stock plant grow for six years and never produce an offset. In a case of this kind an inch or so may be cut from the base of the tap root and be planted

in a small pot of sandy soil, the cut portion to be left level with the surface soil. Buds will form, and ultimately plants will be produced from them. The plants may also be cut close to the surface when they have a long stem. Rootlets push out from the stem above the ground. Let the plants be cut close to the surface, and the top part will soon grow into as good or perhaps better specimen than it was before. It may be interesting to state that the first exhibition of the National Auricula Society (southern section) was held on the 24th April, 1877, at the Crystal Palace. Since that time forty-four first-class certificates have been awarded by the Society to show Auriculas, exclusive of the present year. They are as follows, and only those marked with an * have been sent out.

In 1877 no awards were made.

1878.—*Silvia (Douglas) grey edge.
,, *Omega (Turner) white edge.
1879.—Ringdove (Horner) self.
,, Grey Friar (Llewelyn) grey edge.
1880.—Cyclops (Horner) green edge.
,, Orion (Horner) green edge.
,, Thetis (Horner) grey edge.
,, *Heroine (Horner) self.
,, Rob Roy (Smith) exhibited by Mr. Dean, green.
,, Rev. F. Tymons (Dean) green edge.
,, *Conservative (Douglas) white edge.
,, *Mrs. Dodwell (Simonite) white edge, sent out as Heatherbell.
,, *Mrs. Douglas (Simonite) self.
,, Lord Salisbury (Mellor) self.
1881.—King of Greens (Barlow) green edge.
,, *Mabel (Douglas) grey edge.
,, Snowdrift (Horner) white edge.
,, Erebus (——) self.
1882.—Agamemnon (Horner) green edge.
,, Luna (Horner) grey edge.
,, Corona (Horner) self.
,, Jumbo (Douglas) grey edge.
,, *Mrs. Moore (Douglas) grey edge.
,, *Duke of Albany (Douglas) self.
,, George Rudd (Woodhead) grey edge.
,, Mrs. Dodwell (Woodhead) white edge.
,, *Brunette (Pohlman) self.
1883.—Green Finch (Barlow) green edge.
,, *Ajax (Horner) grey edge.
,, *Conservative second time in error, white.
1884.—Merlin (Horner) grey edge.
,, Magpie (Horner) white edge.
,, Mrs. Horner (Horner) self.
1885.—*William Brockbank (Mellor) exhibited by Mr. Brockbank.
1886.—No certificates awarded.
1887.—Grayling (Horner) grey edge.
,, Magpie (Horner) white edge.
,, Amanda (Horner) white edge.
,, Dulcie (Horner) self.
,, Rubra (Horner) self.
,, Edward Pohlman (Turner) green edge.
,, James Douglas (Bolton) green edge.
,, Samuel Barlow (Bolton) grey edge.
,, Abbé Lizst (Douglas) green edge.
,, Sir William Hewett (Douglas) self.

Having been frequently asked when this or that variety of the show Auriculas are to be sent out, the above list will supply the information sought. It also shows the work being done in raising seedling varieties, and gives some idea of the quality of the work, for it is not to be supposed that any of the above varieties would receive first-class certificates unless they had some qualities inherent to them not belonging to the older varieties. In fact, all the old Auriculas, with the exception of perhaps George Lightbody (Headley), Smiling Beauty (Heap), Lancashire Hero (Lancashire), and—but I cannot name another—must go out of cultivation in a few years. From the above list Horner's Greyhound is omitted. It has not yet received a certificate, but the year in which it was first exhibited it won premium as the best Auricula of any class. In the old-fashioned garden at Lowfields are numerous seedlings in all the classes as yet unknown to fame, but they will be brought into notice as soon as they have been proved equal to their first promise. Scores of good growers north and south are now raising seedlings, and the race is not always to the swift, nor the battle to the strong. The raisers of Smiling Beauty and Lancashire Hero were small growers, handloom weavers by trade, yet their names have long been cherished by Auricula growers and will not soon be forgotten. Considerable enthusiasm has been aroused in the south. New growers are being added every year, and we may hope that the interest excited may be maintained, in order that these and other delightful old florists' flowers may not be lost to sight, and only be dear to us as memorials of the past.—Jas. Douglas.

NOTES ON EARLY ENGLISH HORTICULTURE.

No. 1.

The gardeners' pursuits and civilisation have gone in company over our world from its earliest recorded history until now, and the high culture of England at the present time has raised our horticulture to a position of importance beyond that it ever occupied before. We know that where savage life prevails gardens rarely exist; the ignorance, laziness, and brutality, as also the poverty, frequent amongst barbarous tribes, seem to forbid anything save agriculture of a rude kind, to which the men, or perhaps the women, are driven by necessity. Cultivation of flowers, fruit, and choice vegetables to please the palate, afford variety in diet, or gratify the fine sensibilities of the eye and nose, is not an employment likely to be followed by a degraded people. Even in a civilised land the art of gardening has its vicissitudes. Such has been the case with Britain. To take one instance, it is a fact that during the latter years of the reign of George III. horticulture made little progress, owing to the drain on the country's resources through long wars, and the great interruption to commerce which they caused. Recently I have been led to observe while in some metropolitan suburbs where much distress has prevailed, that many of the inhabitants are not showing their usual diligence in attending to their little gardens on the approach of spring. Some delay may have arisen from the ungenial weather, but there are those who have no heart for gardening because of the shadow of want which darkens their homes, and there is also a lack of means to purchase seeds or plants.

But leaving the present for the past, however, and not to dwe lengthily on antiquarian details, or recall the history of Adam and Eve, it is well, before writing about early English gardening, just to remind the reader that Egypt, the home of most primitive arts, was certainly the land where gardening was first extensively practised. The old Egyptians grew a variety of vegetables, and they had also gardens of herbs for flavouring purposes or medicine. They planted in avenues the Sycamore, Fig, or Mulberry, and other fruit trees; we have, moreover, evidence from their ancient monuments that they had for delectation gardens of flowers and shrubberies. Now the Phœnicians, the Sidonians probably also, who were great travellers in their day and had much to do with Egypt, visited England ages before the birth of Christ, but they do not appear to have imparted to our remote ancestors the art of gardening, or indeed any art. These early navigators came to this island simply as traders, and imparted no knowledge, as we may well suppose, to a wild people with whom they probably conversed by signs.

When Julius Cæsar landed in Britain he found on her shores a Celtic race which had attacked the original inhabitants, a dwarf race of Mongolian type, had conquered and killed many, driving the rest to the hills. These had no knowledge of plant cultivation, but they may have had flocks. Their successors, who fought so fiercely with the Roman legions, understood how to sow, tend, and gather in a crop of Wheat or other Grass. Nor were these ancestors of ours altogether as barbarous as the common representation makes them to have been. There were differences amongst them, and the tribes near the coast had made most progress. Old British barrows or burying places that have been explored show they possessed a variety of tools and weapons far superior to the primitive knives of flint. Capital knives, furnished even with sheaths, have been unearthed, made, not of iron usually, which was scarce, but of brass—*i.e.*, copper and tin mixed, resembling the brass of the Greeks. Here is one of the two earliest implements required for agriculture or gardening—viz., an article by which plants could be cut. The other, a pick or spade of some primitive kind, the Britons had besides, we may be sure, though not now discoverable. They were acquainted with one means, at least, of improving a poor soil, for it is stated they used as manure on some fields of clay, a marl, either chalk, or chalk mixed with lime. But the corn was housed by them in places underground, without threshing it, and as long as it lasted they beat out of the ears day by day what they required. Rude fencing was placed about their crops to protect these from various enemies, and it is supposed they understood how to plant a quickset hedge, selecting shrubs prickly or thorny for this purpose.

Probably the Britons protected their orchards thus, for it is manifest that they planted Apple trees, from the various references to this fruit. The ancient name of Glastonbury is said to have been *Ynys Avella*, meaning an "Apple orchard." Whitaker thinks the Apple was first cultivated by the Hædui of Somersetshire, and

some suggest the Phœnicians introduced this tree from Greece. Not only did the Druids pay reverence to the Apple, but the old bards also esteemed the present of a branch of Apple blossom so fortunate an omen that it was their chosen reward for success in song. The fact was noticed that the parasitic Mistletoe grew on the Apple in preference to other trees, and as there was a special value attached to the plant when it was found upon the Oak, with the object of obtaining it there the Apples were set near Oak woods. They were ignorant of the method of producing Mistletoe plants by simply pressing the berries upon the bark of some suitable tree. The festival of this sacred shrub is reckoned to have been held about the 10th of March, the anniversary being kept as their New Year's Day also.

We have remarked that the Britons knew how to make hedges. Probably they often chose for this purpose the Yew and the Holly, the former on account of its dense growth, the latter because of its prickliness; both are indigenous species. The Yew was planted by them on spots where worship was performed, and the abundance of Yews in Wales, the last retreat of the ancient Britons, shows that it was regarded by them with reverence, or at least by their priests and bards. Probably the old name signifies "ever-living," and they used it as a symbol of immortality, even as the Greeks and Romans did the Cypress. And the tough wood of the Yew was found serviceable for weapons or implements. By some means the Britons acquired great faith in the medicinal qualities of Rue, and they grew this plant, having somehow obtained it from its habitat in the south of Europe. The Druids said it was only to be touched with the hand when young. When the greenish yellow flowers appeared it was to be carefully cut without grasping it. One virtue attributed by them to the Rue was a power to strengthen the sight, valuable therefore to the hunter or warrior. How they made use of it we cannot tell, but in later days people supposed that the Rue, or Herb of Grace, yielded its benefits to those who sniffed at the flowers and foliage. Hence has arisen a funny mistake, as some writers have called it a "nose-herb," meaning that its effects could be obtained through the nose. The supposition has been made that people made nosegays of it for the pleasure of smelling it, which would have been an odd fancy, as the odour is decidedly oppressive, almost disagreeable.

Of the Woad, a plant the Britons largely employed as a dye, they may have found an abundance growing wild, though in our day it is scarce. They understood how to obtain three distinct colours from this plant; and it is probable they sought in the spring, all round the southern coast, the wild Seakale (Crambe maritima), though they did not cultivate it, cutting off the young stalks close to the crown of the root, just as people do now.—J. R. S. C.

RIVINA HUMILIS.

The clusters of rich scarlet berries which this greenhouse perennial produce so freely during the winter months render it a very useful and effective plant for furnishing purposes. It is of very easy culture. Seeds sown now in the ordinary way and placed in heat will soon germinate. Prick the seedlings out about 2 inches apart in a pan filled with light sandy soil, return them to heat, water and shade from sunshine until the roots have taken to the soil. Subsequently place the plants into 3-inch, and again in 4½-inch pots as soon as they require more room at the roots. Stopping the plants a few times to make them branch, and giving water at the roots when necessary, growing them on in a frame during the summer.—H. W.

FERTILISATION OF EARLY PEACHES.

Your correspondent, Mr. J. B. Riding, seems to question the good results of the practice which it is my duty to see carried out under the direction of the head gardener with whom I serve, and who tells me he has practised it for a number of years in different localities, and never yet failed to secure a good set of fruit. I had never before seen such simple means used in early houses, and was rather surprised on being told the course to be pursued. Now I can safely say, were I acting upon my own responsibility and having suitable structures with trees in good health (which is, without doubt, very essential to perfect fertilisation, whatever be the means applied), I should not hesitate in adopting the same treatment. It is, I believe, a recognised fact that small-flowered varieties usually set their fruit much more freely than large-flowered ones. It so happens that out of the seven trees in our early house five are large-flowered, and they set quite as freely as the others. The trees are in good condition, producing abundance of strong well-developed flowers, which made the house quite a sight at the time. The houses are constructed in accordance with the usual style of fruit houses—viz., lean-to's facing south, and stand in a light open position. We very rarely fail to have the temperature at 50° on a morning with a little ventilation at the front ventilators, difficult as it may appear to your correspondent, without having recourse to excessive firing.

With the head gardener's permission I have sent a shoot cut from one of the trees in a later house for the Editor's inspection, on which the fruit is set, but not thinned. This is, of course, no criterion as regards the early trees, still the same means are adopted for fertilising. I am thoroughly convinced that it is quite possible to get a first class set of fruit without resorting to such tedious operations as many do. Could Mr. Riding see the trees, I think he would also be convinced.—S. T. C.

[The example is highly satisfactory, out of twenty blossoms the setting of only two being doubtful.]



ORCHIDS AT MOUNT VIEW.

In the Odontoglossum house at Mount View, Sheffield, the residence of D. Ward, Esq., J.P., there are not less than 150 strong spikes of O. Alexandræ and its varieties in a forward stage of development. One now flowering for the first time, and which had been imported and sold as O. Alexandræ of the ordinary type, is a beautiful and very distinct hybrid, apparently between that and O. triumphans or luteo-purpureum. In this house several plants of the small but pretty O. Œrstedi in 4-inch pans are covered with flowers, having about fifty on each plant, three from each pseudo-bulb, and in some cases two on one spike. About twenty plants of Sophronitis grandiflora in small pots are very bright and densely flowered. In a warmer house are fifty vigorous and strong plants of O. vexillarium throwing abundant flower spikes. On one plant in a 6-inch pot we counted nine spikes. Some plants of Oncidium Marshallianum in baskets were very showy in the same house with large branching spikes of about thirty flowers each.

In another large stove is a very beautiful display of flowers of Cattleya citrina, C. intermedia amethystina, a fine variety; Dendrobium Wardianum, a grand display from closely pruned plants, eighty flowers on a plant; D. albo-sanguineum, several plants flowering freely. In this house also are large numbers of plants of Cattleya Mossiæ, C. Mendelli, C. gigas, and C. Skinneri, with Lælia purpurata, all in vigorous health and throwing quite a forest of sheaths. In another cool house some twenty or more plants of Oncidium concolor are gay with abundant flowers, as also in still another warmer house are Dendrobiums thyrsiflorum, Schröderi, and chrysotoxum, with the singular and pretty Utricularia montana in baskets.

ODONTOGLOSSUM ROEZLI.

Such a display of this fine Orchid as is rarely seen is now provided in the Phalænopsis house at Mount View, Sheffield, the residence of D. Ward, Esq., J.P. The plants, which number thirty, are all in the most robust health and vigour, and are covered with numerous strong spikes of their large and beautiful flowers, amongst which there is considerable variation in form, colouring, and in size. Some varieties have more or less large and brightly coloured purple blotches at the base of each petal, whilst others are almost pure white throughout, except a light orange shading over the centre of the lip. We measured a flower of one of these latter varieties, and found it to be 4 inches in diameter and 2 inches across the lip. On the same plant the leaves measured 18 inches in length and 1¼ inch in breadth, the pseudo-bulb from which these leaves sprang being 3¼ inches in length, and carrying four flower spikes each with four flowers, this growth also being typical of those throughout the whole collection. A plant in a 6-inch pot was carrying eight flower spikes, and scarcely a spot or blemish is to be seen upon the foliage of any plant. We noticed also that new breaks were forming two, and in some cases three, from each flowering growth. Mr. Page (the head gardener) is one of the most skilful Orchid cultivators, as the large collection at Mount View by the vigour and fine condition of the plants abundantly testifies, but in nothing is his skill more strikingly exemplified than in his culture of O. Roezli, which he grows the year round in the Phalænopsis house.—W. K. W.

ORCHIDS AT BURFORD LODGE.

Under the management of Mr. W. Bickerstaffe, with an efficient staff of assistants, the Orchids in the collection of Sir Trevor Lawrence, Bart., M.P., still maintain their high character as one of the leading collections in this country. Order and cleanliness are at all times observable in the houses; in fact it would seem almost impossible to make improvement in that respect in any part of this well-kept garden. The floors, stages, pots and plants are all a

clean as constant washing will allow, but nevertheless some insects are so tenacious of life that even this will not eradicate them, although it keeps them in check. The little yellow thrips have perhaps caused more plants to go wrong where Orchids are grown than any other insect, and even here they are the source of much anxiety, as, for instance, a noble plant of Lissochilus giganteus is so subject to their attacks that it has only been by great perseverance that the present results have been obtained. The general appearance of the plant somewhat resembles a Phaius, and it has sent up a flower spike 8 feet in height, bearing fourteen fully expanded large blooms of a beautiful pale rose colour with as many more buds to open. Near to this in the large house are other rarities in bloom, including the lovely bright yellow Spathoglottis Kimballiana, which was certificated at the meeting of the Royal Horticultural Society on March 27th. It lasts a long time in perfection. S. plicata is also in bloom, and Pescatorea Klabochiana, Acanthephippium bicolor, Catasetum Gnomus, and Phaius Blumei.

The most useful appliance that has come under my notice for the destruction of thrips is Bloxham's fumigator. It is simple, and can be used without injuring any Orchid. By laying a plant on its side the smoke can be driven into the heart of the plant or any hiding place, and as the smoke passes through two perforated plates and a funnel it is quite cool before coming in contact with the foliage or flowers. An invention like this ought to be well advertised.

The specimen Cypripediums are very healthy, and those not flowering are growing freely. The rare C. Stonei platytænium is represented by a plant having several fine growths. In the Vanda house a group of Phaius tuberculosa occupy a shady and moist corner where they seem to thrive ; they are growing on rafts placed in pots with a little peat and sphagnum. The curious Trichoglottis fasciata is flowering, and many plants of Utricularia montana in baskets are doing remarkably in a moist recess of this house.

Epidendrums are well cared for, and although some are curious only, others like E. Wallisi possess great beauty, and E. glumaceum is fragrant like Violets. Oncidium bifolium majus grown in baskets is well flowered, and it is as beautiful as it is rare. Habenaria militaris, certificated last year and figured in the Journal, is represented by several plants. Maxillaria Turneri is bearing scores of rich cinnamon brown and crimson fragrant flowers. The Masdevallia house is very bright just now. M. Harryana in great variety makes a good show, also M. Veitchi, one named gigantea being of great size and superbly coloured. There are many choice seedlings of Dendrobiums and Cypripediums ; some have bloomed, and the others are being watched with interest.

The pleasure grounds, kitchen garden, fruit and plant houses at any time repay inspection. The Anthuriums are grand ; many seedlings of various parentage and well-known species are producing hundreds of bright showy spathes. In a stove Begonias of the nitida section, large plants of Impatiens Hawkeri and I. alba, with the violet-scented Tinnæa æthiopica and Glonera jasminiflora are among the flowering plants. Asparagus decumbens and wonderful strong plants of Lapageria alba and L. rosea are trained to the roof of the greenhouse. Mr. W. Bain, who has presided over this department so long, is well known as deserving great praise.

Annexed is a list of some of the Orchids recently noted in flower or expanding : — Acanthephippium bicolor, Ansellia congoensis, Arpophyllum giganteum, Brassia Perrini, Calanthe nivalis, Camarotis purpurea ; Cattleyas citrina, Lawrenceana, maxima, Mossiæ delicata, Schrœderæ, and speciosissima ; Catasetum Gnomus ; Cypripediums Argus, Boxalli, Bullenianum, callosum, caudatum, ciliolare, concolor, Dayanum, Druryi, grande, Harrisianum superbum, hirsutissimum, Lawrenceanum, leucorrhodum, Measuresianum, niveum, selligerum, Swanianum superbum, vernixium, vexillarium, Warneri, and Williamsianum ; and Cymbidium Lowianum.

Dendrobiums aggregatum, barbatulum, chrysotoxum, crassinode superbum, Dalhousieanum, Devonianum, Falconeri giganteum, fimbriatum oculatum, Findleyanum, infundibulum, Jamesianum, Jenkinsii, lituiflorum, luteolum, macrophyllum, pulchellum, superbiens, Smilliæ, thyrsiflorum, and undulatum ; Epidendrums cinnabarinum, crassifolium, cnemidrophorum, glumaceum, nocturnum, Schomburgkii alba, Stamfordianum, Wallisii, and xanthina ; Lælia cinnabarina and harpophylla ; Leptotes bicolor, Lissochilus giganteus, and Lycaste flavescens.

Masdevallias bella, Chimæra, Chelsoni, Chestertoni, Harryana, ignea, ignea aurantiaca, ignea Massangeana, Lindeni, ludibunda, pulvinaria, racemosa Crossi, radiosa, rosea, Shuttleworthii, Veitchiana, Wagneri, and xanthina ; Maxillarias Harrisonii and Turneri ; Odontoglossums Alexandræ, Cervantesii, Cervantesii decorum, cirrhosum, Edwardi, Harryanum, miniatum, nebulosum pardinum, Pescatorei, Phalænopsis, pulchellum, Roezlii, Rossi majus, sceptrum, tentaculatum, and vexillarium triumphans ; Oncidiums ampliatum, bifolium, concolor, incurvum, leucochilum, longifolium, macranthum, and Marshallianum ; Paphinia grandis, Pescatorea Klabochiana, Pholidota chinensis, Phaius Blumei and Wallichii, Phalænopsis amabilis, Pleione humilis, Pleurothallis ornata, Restrepia elegans, Schomburgkia crispa and tibicinis, Scuticaria Hadweni, Sophronitis grandiflora, Spathoglottis Kimballiana and plicata, Trichoglottis fasciata, Trichopilia lepida and suavis alba ; and Vanda suavis.—G. W. Cummins.

PLANTING HARDY PERENNIALS.

(*Continued from page 322.*)

Weather more suitable and seasonable for the above work could not possibly be selected than the present, therefore no time should be lost in procuring plants or dividing existing ones, or, in fact, performing any necessary work among hardy border plants.

Gentiana Andrewsi.—Taking into consideration that this species never expands the flower buds, this is one of the most showy of the group, and certainly one of the best of the herbaceous section. The flowers are produced in terminal and axillary clusters, and are of an intense indigo blue ; it grows from 1½ to 2 feet high, delighting in deep rich loam in partial shade.

Gentiana asclepiadea.—An early autumn flowering species, coming into blossom with the Meadow Saffrons or Colchicum, and Crocus speciosus. It is 2 feet high, with somewhat slender stems and purple blue flowers. It is a good plant, and the white variety should always bear it company. Both are suited to moist partially shaded positions.

Gentiana acaulis and verna.—Both are beautiful among early spring plants, which nearly everyone may succeed with. The first named stands out alone for grandeur of blossom and colour combined, and no other of its tribe can in any way compare with this for effect when seen *en masse*. In the lovely Vernal Gentian and its varieties we find a charm peculiarly their own. Both succeed admirably in rich loamy soil, and should not be disturbed unnecessarily.

Geranium armenum.—A handsome perennial, 2 feet high, flowers purplish crimson in great profusion, a plant of sterling merit. G. Endressi has rosy pink blossoms, very pleasing and beautiful, grows 1 foot high. G. ibericum has bluish mauve flowers of considerable size, and attains 2½ feet high. Each of these produces flowers in great numbers, and continues in flower over a somewhat lengthened period.

Geum coccineum plenum.—The double scarlet Geum is a deservedly popular plant of pleasing habit. It may be classed as one of the best perennials in cultivation ; it is excellent for grouping, and may be bedded with very good effect. The flowers are brilliant scarlet, double, and borne in great profusion from early in summer onward. This should be in all collections, for in many respects it is without a rival. It will grow in any ordinary soil.

Geum montanum.—This has golden yellow blossoms, and grows about 1 foot high, and is among the showiest of spring flowers.

Gypsophila paniculata.—Where something out of the ordinary is required for mingling with cut flowers the sprays of this unique plant are of great value. Its blossoms are whitish and individually small, hence its elegance when arranged in vases. It yields an abundant supply of much-branched flower stems, and is specially fitted for any floral arrangement. The plant is of bushy habit, growing nearly 2 feet high.

Helenium pumilum.—A neat attractive plant, from 1½ to 2 feet high, covered with golden flowers, very useful for cutting.

Helenium autumnale.—A much superior plant to the last, attaining 2½ feet to 3 feet high. The flowers are a beautiful soft canary, which so many admire. It flowers with great freedom from the middle of July for weeks in succession. An indispensable plant, either for the border or for cutting.

Hemerocallis (Day Lily).—This group may conveniently be divided into two sections, the species with narrow leaves and dwarf habit, and those of taller growth with broader bolder leaves. Another distinctive mark is that those contained in the last section produce flowers which last but one day, while those in the first group invariably continue for two days and then perish. In both cases the flowers are produced in great profusion, consequently those not aware of their characteristics would fail to note this, for they develope flowers almost daily in bright weather. Among the best are flava, Thunbergi, and graminea, each having golden trumpet-shaped flowers, those of the first being fragrant, and thus is also adapted for pot work. These belong to the dwarf narrow-leaved forms. Of the remainder Kwanso fl.-pl., and disticha fl.-pl., may be taken as the best, with flowers of a bronzy orange and bronzy yellow. The Day Lilies prefer a good loamy soil to make a good show in summer time.

Hepaticas.—These modest spring plants are not so fine this year as usual ; they severely felt easterly winds recently, which played havoc with these Violets and many more which were not covered with snow, therefore they are lacking in their usual brightness ; but in the full hope of a better future select a more sheltered spot, and plant at once to have them established ere the summer drought arrives. The singles provide the best display, and may be had in three decided colours of white, pink, and blue.

Hesperis matronalis alba plena (Double White Rocket).—An old fashioned perennial still popular. It is an easily cultivated plant growing 2 feet high, and producing massive branching spikes of white flowers. A good companion is the Double Purple. When well grown in rich garden soil both are very effective among early summer perennials.

Hollyhocks.—The grandeur of these is well known, and the fact

that they are regaining their original popularity is welcome news. To insure success with these secure strong vigorous plants from the open ground, and free from disease, carefully avoiding those that are crippled in pots, and which have been coddled in heated structures. The strains of these flowers are so generally good that many of the seedlings are quite equal to the named varieties, and for border decoration.

Iberis corifolia (Perennial Candytuft).—A plant of shrubby habit, dwarf and bushy, covered in May and June with white flowers. Very attractive for rockery or border.

Iris germanica.—The genus Iris contributes a wealth of beauty both as regards diversity of colour, form, and time of flowering that cannot be equalled among perennials. In the group above named we have many superb plants, in colours varying from pure white and white suffused with the most delicate tint of satiny blue, to primrose yellow chrome, lavender, mauve, purple, dark blue, lilac, white with violet pencilling, and a host of other intermediate shades which almost defy description. All are perfectly hardy and robust, and delight in any fairly good soil, many being especially suited for towns and smoky districts; they flower in May, June, and July. Those who have never seen a choice collection can form but little idea of their great beauty, and should make a point of visiting some of the nurseries where these are grown extensively, and judge for themselves. Either in the border or for cutting they are most useful. If cut when the first flower expands and placed in water every blossom upon the spike will perfect itself, which is much in their favour, especially when this occupies some eight or ten days from the first bloom to the last. It is interesting to watch them develope and note the varying shades of their flowers.

Inula glandulosa.—I consider this all that could be desired in habit, vigour, and free flowering qualities. It is a true herbaceous perennial, flowering in midsummer. The leaves are ovate-lanceolate, thickly set with short hairs, and form a compact tuft close upon the ground. The flowers are pure gold, and are composed of numerous thread-like florets, which give the plant an extremely pleasing appearance. To give the reader a clearer idea of its beauty and grace, I cannot do better than compare its flowers to a single Chrysanthemum variety with blooms about 4 inches across. No collection of hardy plants can be complete without this. It prefers a strong loamy soil, and was introduced from the Caucasian and Georgian Alps in the early part of this century.

Lathyrus latifolius and albus (Everlasting Pea).—These are among our oldest acquaintances, forming huge bushes in country gardens where they have stood for years, annually to be covered with flowers which are very serviceable for cutting purposes. The pure white variety is especially serviceable for this purpose, and is a by no means common plant. Usually it is seen supported by a few rough stakes or tied to a trellis, while it is perhaps most effective planted on the large rockery and allowed to trail at will. Thus placed and overhanging a huge boulder it produces an effect almost unique, and gives it a more natural appearance.

Liliums.—It is my intention at this time only to advance a word or two of caution respecting these. It is not a time to be planting them; this should be done in early autumn, and those who plant Lilies now, unless they are established in pots, will hardly expect them to do much good. Protect Lilies from spring frosts. All the forms of L. speciosum, longiflorum, and others are now several inches through the ground, and frosts will do them much harm unless they are protected in some way. This is easily accomplished when planted in clumps by placing a few boughs round them, or if in a bed a light awning or net will give them the required protection if placed on each evening.

Liatris.—A singularly interesting group of herbaceous perennials from North America. The several species are all of compact habit, and produce erect stiff spikes of rosy purple, purple, or pale purple flowers during summer and autumn. Any light loamy soil will grow them perfectly, and it may be remarked that they were apparently unaffected by the great drought of the past three summers. Bees are very fond of their flowers. All are perfectly hardy. Another peculiarity is they commence flowering from the top of the spike and continue flowering downwards. In most plants the reverse is the rule. L. elegans, pycnostachya, and odoratissima are perhaps the best of this family.—**J. H. E.**

(To be continued.)

CYCLAMENS AT RIPON.

THE best grown Cyclamens that I have seen of late years are grown by Mr. Wilson in Dr. Fremantle's garden, The Deanery, Ripon. Some are grown in 6-inch pots and others in 4-inch pots, the number and size of the blooms and corms being remarkable. I counted as many as 100 blooms on a plant in a 6-inch pot, and of a size and substance not often seen, at least in this neighbourhood. I think his practice differs somewhat from that adopted by most people, for after flowering he cuts off all the old foliage, gives them a fortnight's rest, then shakes out the plants and repots them. They are placed in a Melon or other pit where there is a good bottom heat until well rooted, and are then transferred to a shelf in a cool vinery near the glass, where they remain until they again come into flower.

The compost employed is one part each of loam, peat, leaf soil, and well decomposed cow manure, well mixed, and the plants are potted firmly. The result is a credit to the cultivator, plenty of the flowers are from 1½ to 2 inches in depth, and with stout stems.—K., *Bishopton.*



AT a general meeting of the ROYAL HORTICULTURAL SOCIETY held on Tuesday last, Rev. W. Wilks, Secretary, in the chair, 106 candidates were duly elected Fellows of the Society.

—— IN answer to many inquiries from home and foreign correspondents, we have pleasure in announcing that DR. HOGG has practically recovered from his indisposition while in Ghent.

—— IN connection with the INTERNATIONAL EXHIBITION AT BRUSSELS, which will be opened in May this year, and continue until October, a series of horticultural shows will be held, of which a comprehensive schedule has just been issued. From May 5th to October 31st there will be a permanent exhibition of trees, shrubs, and flower garden plants in the grounds. On July 1st and 2nd an exhibition of cut Roses will take place; but the principal exhibition will be that fixed for August, 19th to 23rd, when 134 classes are provided with nearly 270 gold, silver-gilt, and silver medals as prizes. Sections will be devoted to new plants, Ferns, Cycads, Palms, Aroids, Bromeliads, Orchids, and numerous other plants; there are also sections for bouquets and floral decorations and fruit. An exhibition of fruit, vegetables and Dahlias will be held on September 30th and October 1st, and in addition from August 11th to 23rd there will be an international agricultural Exhibition.

—— ANOTHER of the older British horticulturists has joined the majority—namely, MR. THOMAS CRIPPS, who died on the 17th inst. in his seventy-ninth year. Mr. Cripps founded the firm of Cripps & Son, Tunbridge Wells, more than half a century ago, and steadily developed a large business, the nursery having been noted chiefly in recent years for Clematises, shrubs, and trees. The first Fuchsia with white sepals—Venus victrix—was sent out from this nursery in 1842 at a guinea per plant. It was purchased from the raiser, Mr. Gulliver, gardener to the Rev. S. Marriott, Horsmonden, Kent, and was believed to have been obtained from Fuchsia gracilis, which it resembled in foliage. The variety is still included in some nurserymen's lists, but is rarely seen in gardens, though very distinct.

—— THE WEATHER.—"B. D.," writing from Scotland, says:—"The first half of the week ending 23rd inst. was very showery, with a high temperature and little sunshine. On the 19th, after midday, a sharp thunderstorm occurred in South Perthshire. A fall of the thermometer immediately followed, and with a return of piercing N. and N.E. winds, the weather has since been bitterly cold." In the south the weather has been very dull, with frequent heavy rain—a very unpleasant change from the previous week.

—— REFERRING to WRITING ON AND CLEANSING ZINC LABELS, a correspondent, "F. C. S.," remarks:—"Chloroplatinic acid is good, but it is not always easy to obtain platinum. Copper salts (*e.g.*, the sulphate) do well if the label be previously washed in a dilute solution of acid, as by this means a chemically clean surface is obtained. I use a solution of about one part of hydrochloric acid to ten of water. I write this to suggest the advantage gained by cleaning the label, which should subsequently be washed in water."

—— IN a shady part of the Vanda house at Burford Lodge there is a very fine specimen of the LATTICE-LEAF PLANT (OUVIRANDRA FENESTRALIS). It is grown in a tub filled with clear water, and an occasional drip at regular intervals from a vessel above is sufficient to keep the water disturbed, which seems quite necessary to grow this interesting plant. Some of the leaves measure 15 inches in length without the stalk, and in width 5½ inches. Many seedlings are springing up.

—— GLAZED FLOWER POTS.—We have received from the Cumnock Pottery Company, Cumnock, N.B., samples of the glazed flower pots prepared by them, and which were highly commended by our correspondent "Dum Spiro Spero" on page 27 (January 12th) this year. They are thoroughly well made, of various sizes, the outer

surface only covered with a soft brownish glaze, that has a much more agreeable appearance than the ordinary red earthenware pots. The base of the pot is also slightly raised above the outside rim, so that there is no danger of the drainage being impeded. We have seen many excellent results obtained by cultivating plants in glazed pots, and Mr. David Thomson of Drumlanrig uses them almost exclusively now. The prices of the Cumnock pots can be ascertained from an advertisement on another page, and we have no hesitation in commending these productions to the notice of amateurs and gardeners.

—— "K., *Bishopston*," writes—"I saw an article in the Journal some time since recommending CROSSING VALLOTA PURPUREA WITH EUCHARIS AMAZONICA, making the former the seed-bearing parent. I have done this and have some seedlings, but the only difference I can see at present is that some are much paler in the bulb and leaf than others, but as they become stronger they all have the characteristics of the Vallotas. Whether when they flower they will prove distinct remains to be seen. The first seed was sown in February, 1887."

—— A BIRD SCARER.—"F. J." wishes to know if any of our readers have tried "CLIVE'S BIRD OF PREY," advertised in this Journal, and, if so, would they state the results?

—— "G. W. C." sends the two following notes :—"The ornamental Fern house at Highbury, near Birmingham, is an interesting house, with Ferns, Palms, and Mosses growing well on and among the rockwork. In one corner is the new ANTHURIUM CHAMBERLAINI, with its roots clinging to the stones. It is one of the most handsome in the genus, bearing large leaves on stalks about 4 feet long, and the spathes are boat-shape, 8 or 9 inches long, 4 inches in width, and of the deepest crimson colour. This plant appeared with an importation of Cattleya Gaskelliana."

—— "IN the conservatory attached to the mansion at Highbury is a specimen of the ABYSSINIAN BANANA, MUSA ENSETE, the stem of which measures 6 feet 2 inches in circumference at 6 inches from the ground; it is fully 30 feet high, and the leaves 18 feet long. A large Chamærops Fortunei, Phœnix reclinata, and Camellias planted out fill the centre of the house. On the front stage well grown spring flowering plants are arranged, including most of the choice named Clivias or Imantophyllums. Mr. Chamberlain likes to see large masses of colour arranged separately, and there are large banks of Tulips here and groups of Cinerarias in another part of the house."

—— UNDER the title of THE ART OF PREPARING VEGETABLES FOR TABLE, Messrs. Sutton & Sons, Reading, have produced a useful little book of sixty-eight pages, which has just been published by Hamilton & Adams, Paternoster Row. Fifty-two vegetables are referred to briefly, and concise instructions are given on the best modes of cooking and preparing them for table.

—— MR. J. E. JEFFERIES, Oxford, sends us a photograph of a POTATO MONSTROSITY, the tuber represented having a peculiar palmate or five-lobed form. He also states that he has another with a link of an iron chain apparently passing through the tuber.

—— LIFTING AND REPLANTING OF VINES.—"W. K. W." writes—"As an example of how little they are injured by this process if carefully and judiciously carried out we were a day or two since shown a house of Black Hamburghs which were lifted in September last and replanted in fresh compost, and which Vines are now in much more vigorous health and condition than they were previous to being lifted. They are also carrying a heavy crop of large bunches of Grapes, which are now (April 19th) just being thinned, showing that the Vines were not allowed a lengthened period of rest but were started early. The foliage also is plentiful and fine, the larger leaves being nearly 12 inches in diameter, almost a black green in colour, very stout and leathery This house of Grapes is at Mount View, Sheffield, the residence of D. Ward, Esq., J.P., gardener Mr. Page."

—— MESSRS. JAMES DICKSON & SONS, Chester, send us a box of blooms of NARCISSUS SIR WATKIN, a variety which, they say, is very grand with them this season. The flowers are very fine indeed.

—— THE usual fortnightly meeting of the WALKLEY (SHEFFIELD) AMATEUR FLORAL AND HORTICULTURAL SOCIETY was held on Friday evening last at the Society's rooms (the Howard Hotel, Walkley), when an excellent paper was read by Mr. R. H. Laughton, Vice-President, entitled "A Night with Canon Hole," and consisting of well-chosen extracts from that popular rosarian's "Book about Roses," interspersed with useful remarks and pleasing witticisms by the essayist, who on this occasion appeared to great advantage both as a writer and as a reader, and received much well-merited applause. A useful discussion followed, after which the usual thanks to the essayist was carried with acclamation. There was a large attendance of members, and the tables were well filled by a very fine display of flowering plants, Ferns, and cut flowers, comprising a very good specimen Azalea (Princess Louise) and cut Roses from Mr. F. Barnes, good Azaleas and a fine large specimen Calla from Mr. Cuckson, beautiful stands of Tea Roses and Pelargonium flowers from Duncan Gilmour, jun., Esq., and a fine collection of Cinerarias from Mr. Woodcock.

—— STATICE HOLFORDI.—"This blue-flowered greenhouse perennial," says "H. W. W.," "is of easy culture. Cuttings of the young growths are taken from the base of the plant and inserted in 3-inch pots filled with a mixture of three parts loam and one of leaf mould, with a surfacing of silver sand. The pots are plunged in a gentle bottom heat, water to settle the soil about the base of the cutting, and keep them close until rooted. After this they should be grown in a more airy atmosphere near the glass, and be shifted into larger pots as they require more room for root-action, supplying the plants with moisture at the roots, and damp the foliage on bright afternoons to keep them free from the attacks of aphides and red spider."

—— A CORRESPONDENT who desires information on PRESERVING TURF writes :—"I am compelled to remove about a quarter of an acre of turf which has been cut over three months. I wish to preserve it till November next, before I can lay the ground out owing to an extensive drainage scheme being carried out. Would any of your numerous readers give me their experience of how it would be best to keep it till then? If so, they would greatly oblige."

—— THE IRISH EXHIBITION IN LONDON.—We are requested to publish the following :—"In addition to the already remarkable list of persons prominent in politics, religion, law, literature, and society, who have given their active support to this peaceful effort to benefit the sister kingdom, are the following—The Earl of Leitrim, who has joined the Executive Council, the Earl of Aberdeen, the Lord Mayor of Dublin, the Earl of Dufferin, the Lord Chancellor of Ireland, and Sir Algernon Borthwick, Bart., M.P. Many of the corporations in Ireland, including Dublin, Belfast, and Waterford, have officially taken up the subject and have strongly urged upon the trading community in their respective districts their conviction that Irish industries are likely to be substantially benefited by a comprehensive display in London of what Ireland's markets and manufactories can produce. A most significant fact, tending to show that one of the primary objects of the promoters is likely to be fully realised, occurred at the Mansion House in Dublin, at a meeting over which the Lord Mayor, Mr. Sexton, M.P., presided. Mr. Sexton said 'he believed the Exhibition would be a great success, and would promote what he was happy to call the daily improvement in the relations of the Irish people and their neighbours beyond the sea,' and he proposed the formation of a Committee to further the objects of the Exhibition. Several prominent men have offered considerable contributions towards the scheme, in the belief that no better means could be devised for advancing the best interests of Ireland. The date fixed for the opening at Olympia, Kensington, is the 4th of June, and the Exhibition, which covers 12 acres of ground, will remain open till the 27th of October." Lord Arthur Hill, M.P., is the Honorary Secretary.

—— WE are informed that the BARTON-ON-HUMBER AND DISTRICT CHRYSANTHEMUM SOCIETY'S SHOW will be held on November 14th this year. Schedules may be had from the Hon. Sec., Mr. C. J. H Crowder, Barton-on-Humber.

—— "SMALL plants of the half-hardy perennial shrub, VERONICA ANDERSONI VARIEGATA," writes a correspondent, "are very useful, either as an edging to large beds of herbaceous or other plants, or as grown in 3-inch and 4½-inch pots for standing on the side stages of greenhouses and conservatories. It is readily propagated from cuttings of the young wood being placed in 4½-inch pots filled with sandy soil, watered, and placed in heat, afterwards potting them off singly in small pots and attending to them in the way of stopping and giving water at the roots when needful."

"J. W. C." sends the following paragraph—"I wish to draw your attention to three good things for the garden—namely, GLAZED POTS, ANTHRACITE COAL, AND LETHORION CONES. My arguments in favour of glazed pots are—cleanliness, saving in labour in watering and scrubbing. Softwooded plants grow remarkably well in them with care after potting. The coal is the best, cleanest, and I think the cheapest I have used. The cones are good for small greenhouses, and especially suited for Orchids. We could not banish the yellow fly until we used the cones rather stronger than recommended, but they are rather expensive if used on a large scale."

ROYAL HORTICULTURAL SOCIETY.

APRIL 24TH.

THE combination of the National Auricula Show with the exhibits before the Fruit and Floral Committees of the Royal Horticultural Society produced the most extensive display yet held in the Drill Hall at Westminster. Four tables nearly the whole length of the hall, besides several at the ends, were crowded with plants, and the numerous persons who visited the hall during the afternoon were amply satisfied with the exhibition. The tables near the walls were devoted to the Daffodils. At the upper end of the hall were groups of fine Roses, the two central tables being occupied with Auriculas, Primulas, Amaryllises, double Cinerarias, Mignonette, Orchids, and Roses, the last-named having a fine appearance down the centre of the tables. Novelties were numerous, and fourteen were found worthy of certificates.

FRUIT COMMITTEE.—Harry J. Veitch, Esq., in the chair, and Messrs. J. Wright, G. Norman, J. Cheal, John Lee, T. Saltmarsh, Philip Crowley, R. D. Blackmore, W. Marshall, Sidney Ford, T. F. Rivers, and W. Warren. At the commencement of the proceedings Mr. Veitch, in appropriate terms, referred to the great loss the Committee had sustained by the lamented death of Mr. J. Woodbridge, and proposed that an expression of condolence should be conveyed by the Committee, of which he was an effective member, to his widow in her great bereavement—a suggestion that was unanimously adopted.

E. E. Evans, Esq., Brinscombe Court, Strood, Gloucestershire, sent an Apple named Beauty of Brinscombe, a late-keeping variety, in use from February till June. It was supposed to have been raised by the father of the exhibitor, but the Committee thought it too closely resembled Besspool to be regarded as distinct. A seedling culinary Apple that had been previously before the Committee was sent by Mr. Neill, The Gardens, Wythenshawe, Northenden, near Manchester, a good looking conical Apple, but every fruit partially decayed in the centre; it was consequently passed by the Committee. Mr. J. C. Mundell sent a sample of the Moor Park Pippin Apple. It bears some resemblance to the Hollandbury, and is said to be a good keeper, and particularly attractive in spring by the beauty of its blossom. No special award was made. A. H. Smee, Esq. (Mr. G. Cummins, gardener) sent dishes of very fine fruit of Pears Madame Millet and Pius IX, but the quality was inferior. The former is occasionally very good, but proverbially uncertain, and Mr. Rivers remarked that the tree is the reverse of a good grower. Pius IX. is a very large Pear of no particular merit. Messrs. Saltmarsh, Chelmsford, sent a firm medium-sized Apple named Blanders Apple, a medium sized firm fruit, and the best late Apple on the table; also a dish of the Queen Apple, and the fruit, both in regard to appearance and quality, met with the approval of the Committee. The two dishes were sent to show the keeping qualities of the varieties. Mr. J. Lockie, The Gardens, Oakley Court, Windsor, sent specimens of his new Cucumber Lockie's Perfection, a straight dark green medium-sized fruit, resembling Veitch's Perfection. The Committee desired to see it again later in the season. Lullington's Variegated Broccoli, from the Society's Garden at Chiswick, was placed before the Committee. The leaves are white in the centre, edged with green and fringed, the heads being about the size of a breakfast cup. The samples were decidedly attractive, and a first-class certificate was awarded to the Broccoli as a distinct and ornamental variety.

FLORAL COMMITTEE.—Present: G. F. Wilson, Esq., F.R.S., in the chair, and Messrs. Shirley Hibberd, W. Wilks, W. Goldring, H. Herbst, W. Bates, W. H. Lowe, C. T. Druery, G. Paul, C. Noble, C. Pilcher, R. Dean, J. Dominy, H. M. Pollett, J. O'Brien, A. J. Lendy, B. Wynne, E. Hill, J. Walker, and Dr. Masters.

From the Royal Gardens, Kew, came an excellent collection of Primulas, hardy and other plants, including some remarkable rarities. The Primulas comprised twenty or thirty species and varieties, some of the best being Denyana and Escheri, small neat flowers, bright purple, the latter especially good; pubescens alba, rosea, obconica, denticulata, viscosa, Obristi, verticillata, and Palinuri. Other notable plants were the white-flowered Corydalis tuberosa, the wild type of Tulipa suaveolens, with scarlet flowers, found in Turkestan; a remarkable Saxifraga, S. latepetiolata, from Spain, having large divided leaves and small white flowers; the graceful Heuchera sanguinea, with small bright red bell-like flowers in spikes; the pretty Narcissus triandrus albus, often seen as calathenus, having creamy white drooping flowers; the diminutive but charming N. rupicola, with bright orange Jonquil-like flowers; and the American Dicentra canadensis, with elegant finely divided foliage and small white flowers. From the temperate and other houses in the same establishment came grand flower-heads of Rhododendrons Aucklandi and R. Griffithi, also dense spikes of Echium callithyrsum, 9 inches long, the flowers blue, closely packed, with pink stamens. The extremely distinct Anemone Fannini, with broad peltate lobed leaves and large whitish flowers, together with long wreath-like flower-laden branches of the intensely rich crimson Bougainvillea speetabilis, which is too seldom seen in flower, attracted much attention. Many other interesting plants were included in this interesting exhibit, such as the large-flowered Pleurothallis insignis, the pretty pink Pinguicula grandiflora, and the brilliant Cereus Mallisoni.

A collection of Himalayan Rhododendron flowers from J. T. D. Llewelyn, Esq., Penllergare, formed a pleasing group, and amply justified the praise the exhibitor bestows upon these plants for the adornment of the garden. They had been all cut out of doors, and in such a late season as the present this was the more remarkable, as they were much more forward than many in the south of England. The deep red R. Thompsoni and a blush-tinted one named Campbelli were the finest, but barbatum, companulatum, ochraceum, and others possessed considerable beauty. F. G. Tautz. Esq., Studley House, Hammersmith (gardener, Mr. Cowley), exhibited a group of Orchids, which included several fine examples of Oncidium Papilio majus (the Butterfly Orchid); a remarkably rich dark variety of Cypripedium Lawrencianum, named atro-rubrum; large handsome flowers of the distinct Odontoglossum Harryanum, the lip broad, pale yellow on the upper half, veined with crimson at the base; Cypripedium selligerum majus had three large highly coloured flowers; C. Hookeræ majus, an unusually fine variety; C. grande, Cymbidium Lowianum, the curious brownish orange Oncidium Leitzi, with Cattleya Schrœderæ, and C. Lawrenciana rosea were well represented. A. H. Smee, Esq., The Grange, Wallington (gardener, Mr. Cummins), contributed a fine collection of Masdevallias, comprising well grown plants of M. Shuttleworthi, the large dull reddish M. Trochilus, Houtteana, Estradæ, xanthocorys, and a dark coloured and handsome variety of M. ignea.

H. Selfe Leonnard, Esq., Guildford, contributed an interesting collection of small alpine plants. Mr. S. Ford, Leonardslee Gardens, Horsham, was awarded a cultural commendation for long shoots of Passiflora princeps, crowded with bright reddish flowers. Mr. J. Crook. The Grange Gardens, Farnborough, sent a plant of Begonia glaucophylla in a basket to show its fitness for that mode of culture, the stems drooping and bearing salmon red-shaded flowers very freely. Mr. Sullivan, gardener to D. B. Chapman, Esq., Downshire House, Roehampton, exhibited some very capitally grown Mignonette with long massive spikes of flowers (cultural commendation).

Messrs. J. Veitch & Sons, Chelsea, sent several new Azaleas, hybrids between the Ghent and mollis types, which we fully described and illustrated last year. They are most useful decorative plants, and well adapted for forcing. Belle de Gand, Perle, Etoile de Flandres, and Comte de Kerchove were the best of the varieties shown, and with them were some fine Pæonies, one of which was certificated. Mr. B. S. Williams, Upper Holloway, showed plants of Amaryllis Black Prince, a handsome rich dark scarlet variety of the Dr. Masters type (vote of thanks); Miltonia Tolliana, the flowers veined with crimson; Cattleya Mendeli grandiflora; Oncidium undulatum, with brown sepals, and recurving petals tipped with white, and veined with purple at the base; and Odontoglossum Rossi F. L. Ames, for which a certificate was awarded.

The groups of plants were numerous and beautiful, but we can only briefly refer to them this week. Messrs. Paul & Son, Cheshunt, contributed a magnificent group of Roses in pots (silver-gilt Banksian medal) and a collection of herbaceous plants (silver Banksian medal). Mr. Walker Whitton had a large and varied group of Daffodils (silver-gilt Banksian medal). Messrs. Barr & Son, King Street, Covent Garden, and Mr. T. S. Ware, Tottenham, showed fine collections of Daffodils similar to those we have repeatedly noticed from these firms this season; a silver medal was awarded to the former and a bronze medal to the latter. Messrs. Collins Brothers & Gabriel, Waterloo Bridge Road, were also awarded a silver medal for a group of Daffodils, and Messrs. H. Lane & Son, Berkhampsted, a bronze medal for a group of Roses. Mr. W. Rumsey, Waltham Cross, had a fine group of Roses in pots (silver medal). The contributions of these firms added greatly to the attraction of the Show.

Messrs. W. Paul & Son, Waltham Cross, exhibited a new bright red H.P. Rose, Meteor, and a delicate pink or blush H.P. variety named Madlle. Germaine Caillot, together with the white American Rose The Puritan. Messrs. Hart & Co., High Street, Guildford, showed a bold and effective Coleus named Hart's Conqueror. Mr. R. Clarke, Twickenham, contributed a group of excellent Cyclamens. Mr. Howard, Southgate, brought some fine Mignonette grown by Mr. Sweet. Mr. J. Chambers, Isleworth, sent plants of a white Viola named Snowflake, and the dark blue double Violet Victoria. The Civil Service Co-Operative Stores exhibited two baskets and a bouquet of Daffodils. Messrs. Kelway & Sons, Langport, had a group of Amaryllises, mostly with medium-sized but well-formed flowers well varied in colours, also some double Cinerarias. Messrs. H. Cannell & Sons, Swanley, staged a handsome group of the floriferous Begonia Carrieri villosa, which appears to be of stronger habit than the ordinary Carrieri, compact, and having large flowers. Mignonette Cannell's Perfection was much admired, as also were the double Cinerarias from the same firm. A variety of Adiantum scutum, named roseum, was shown by Mr. H. B. May, the young fronds being of a reddish tint.

A novel and simple appliance for propagating softwooded plants was

shown by Messrs. T. Pascall & Sons, South Norwood. It is an earthenware trough constructed to fit over hot-water pipes. It is partly filled with water, and over this a perforated earthenware tray is placed. The compost intended for the cuttings is placed on the tray and the cuttings dibbled in. It was referred to Chiswick for trial.

CERTIFICATED PLANTS.

Rose May Rivers (Rivers).—This originated at Sawbridgeworth ten years ago as a sport from an old China Rose, Clara Sylvain, that is seldom seen now. May Rivers is a Tea Rose with large and deep blooms, the outer petals creamy white, centre clear lemon yellow. Though Mr. Rivers has grown this variety for so many years he has not before exhibited it, and the honour of a certificate was promptly accorded.

Rose Climbing Niphetos (Keynes, Williams & Co.).—A large plant of Climbing Niphetos Rose exhibited by Messrs. Keynes, Williams & Co., Salisbury, attracted considerable attention, as in addition to its free growth it was bearing fine blooms abundantly. Many visitors evidently regarded it as a most welcome acquisition.

Odontoglossum Humeanum (H. M. Pollett, Esq.).—A variety or hybrid of the O. Rossi type, with something of the O. maculatum colouring. The flowers are large, tinged with yellow, the lip broad, the petals spotted with brown, and the sepals heavily marked with a similar colour.

Angræum arcuatum (H. J. Buchan).—A distinct species with rather small white flowers in short racemes, the sepals and petals very narrow, tapering recurving petals and sepals.

Odontoglossum crispum, Charlesworth's variety (J. Charlesworth).—An extremely beautiful variety with large well formed flowers, the petals broad and slightly fringed at the margin, the whole of the flower richly suffused with a rosy crimson hue and heavily blotched with reddish-brown. The plant was a strong one, and had a raceme of ten flowers. It is one of the best of the highly coloured forms that has been shown.

Pæony Comtesse d'Endort (Veitch & Sons).—One of the tree Pæonies with enormous globular flowers 8 and 9 inches in diameter, of a delicate salmon tint. With it was shown a much darker variety named Queen Elizabeth.

Primula Crimson Beauty (F. Crook).—A dwarf Primula, something of the P. pubescens type, with dark purplish crimson flowers and a white centre, very pretty.

Erythronium grandiflorum albiflorum (T. S. Ware).—A large Dog's-tooth Violet, with creamy white flowers and yellow stamens.

Cineraria Beatrice (Kelway).—A double variety, with neat globular flowers, white tipped pink.

Cineraria Queen Victoria (Kelway).—A double white variety, the flowers frequently tinged with pink.

Amaryllis Miss Ainslie (Kelway).—A neat variety, the flowers of medium size, but good shape, scarlet edged with white, and a white central bar. The plant had a scape of four flowers.

Cineraria Faust (Cannell).—A bright rose coloured double variety, the flowers full and handsome.

Cineraria Advance (Cannell).—Another double, rich purple, large, and good.

Cineraria Aspasia (Cannell).—Flowers double, rich, dark blue, fine in contrast with the lighter varieties.

Odontoglossum Rossi F. L. Ames (B. S. Williams).—A distinct addition to the O. Rossi group, with bold well formed flowers, sepals light brown, petals spotted brown, lip broad and white.

ROYAL METEOROLOGICAL SOCIETY.

THE usual monthly meeting of this Society was held on Wednesday evening, the 18th inst., at the Institution of Civil Engineers, 25, Great George Street, Westminster, Dr. W. Marcet, F.R.S., President, in the chair.

Dr. E. Hale, B.A., V.C., Mr. R. Lawson, LL.D., F.S.S., and Mr. S. Walker were elected Fellows of the Society.

The following Papers were read :—

1. "Jordan's New Pattern Photographic Sunshine Recorder," by Mr. J. B. Jordan. The improvement in this instrument over the previous pattern of Sunshine Recorder consists in using two semi-cylindrical or D-shaped boxes, one to contain the morning and the other the afternoon chart. An aperture for admitting the beam of sunlight is placed in the centre of the rectangular side of each box, so that the length of the beam within the chamber is the radius of the cylindrical surface on which it is projected ; its path therefore follows a straight line on the chart at all seasons of the year. The semi-cylinders are placed with their faces at an angle of 60° to each other. They are fixed on a flat triangular plate, which is hinged to a suitable stand, having levelling screws attached, and fitted with a graduated arc as a means of readily adjusting and fixing the cylinders to the proper vertical angle agreeing with the latitude of the station where used.

2. "On the Meteorology of South-Eastern China in 1886," by Dr. W. Doberck, F.R.Met.Soc. This paper gives the results of observations made at the custom-houses and lighthouses by officers of the Imperial Chinese Maritime Customs. In summer there is very little change of temperature with latitude. The temperature depends upon the distance from the nearest seacoast, and is greatest at stations farthest inland. The highest mean temperature occurred in July and the lowest in January. The north-east monsoon blows from September to June, and the south monsoon during July and August ; the latter does not blow with half the force of the former. Rainfall is greatest in Northern Formosa and least in Northern China. Along the east coasts of Formosa and Luzon the winter is the wet season, while in China July seems to be the wettest month of the year.

3. "Lightning in Snowstorms," by Prof. A. S. Herschel, F.R.S.

4. "Insolation," by Mr. Rupert T. Smith, F.R.Met.Soc.

GREYIA SUTHERLANDI.

A PLANT of Greyia Sutherlandi was flowering for some weeks early in the present season at the cool end of the succulent house in the Royal Gardens, Kew, and a specimen was shown at the Royal Horticultural Society's meeting on March 27th. Though it has been considered chiefly

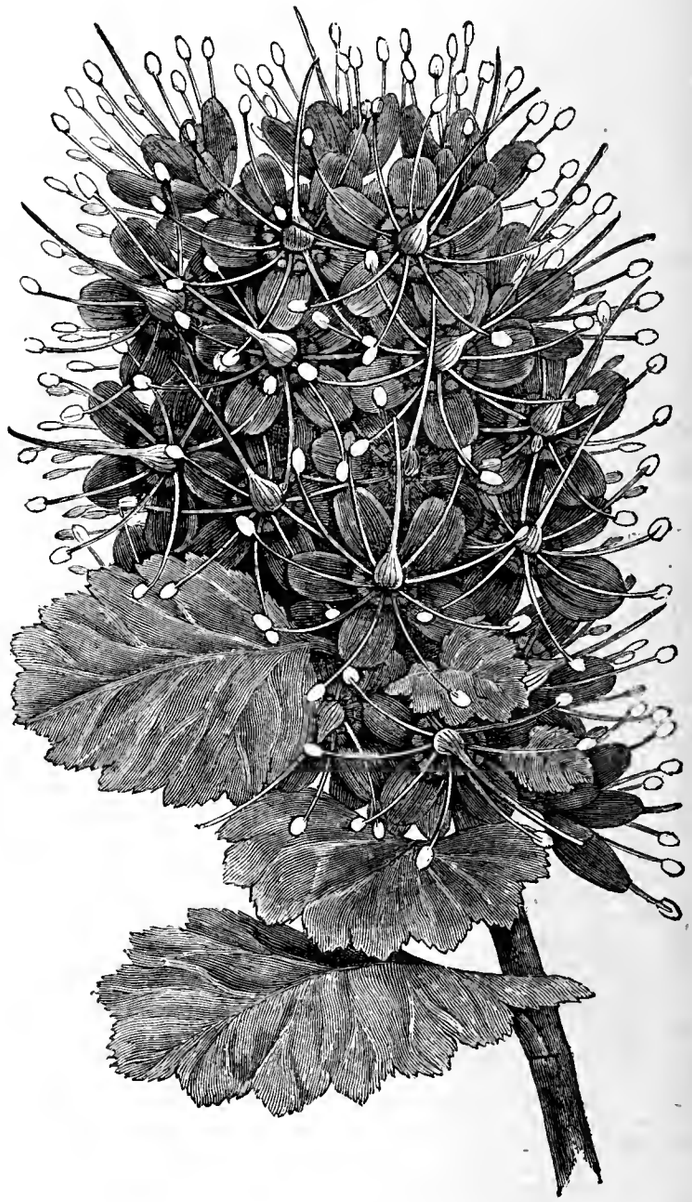


Fig. 43.—GREYIA SUTHERLANDI.

interesting to botanists it is by no means devoid of horticultural merit, for the bright red flowers are produced in dense terminal clusters, and have a rich appearance. In this country specimens, which are not very numerous, seldom exceed a few feet in height, but in its native habitats, the rocks at Port Natal, it is said to attain the dimensions of a small tree, which when in flower has a very brilliant appearance. It is rather strange that amongst the numerous beautiful and distinct South African plants so admirably depicted by Miss Marianne North, this seems to have escaped attention—at least we do not remember seeing it represented in that lady's remarkable collection of paintings at Kew.

The leaves are somewhat fleshy and crenated at the margin. Some are quite smooth, and others densely pubescent, a peculiarity that has been repeatedly noted by several observers. The plant is now assigned to the family Sapindaceæ, but there was much uncertainty as to its

correct position until it flowered some years ago in the Chelsea Botanic Gardens, when it was determined by Sir Joseph Hooker.

GREVILLEA ROBUSTA.

SEEDS of this elegant-foliaged and most useful furnishing plant may be sown at once in a shallow pan filled to within an inch of the top with light sandy soil, covering the seed lightly, water through a fine rose, and then place in a hotbed with a square of glass over the pan and a covering of moss. The seedling plants will in due time appear, and by placing them singly into small 60-sized pots, returning them to heat for a few weeks, giving water at the roots, and shading the young plants from sunshine until the roots have taken to the soil, useful little specimens for furnishing purposes will be secured by next autumn.—SOUTH WILTS.

REVIEW OF BOOK.

Report of Observations of Injurious Insects and Common Farm Pests during 1887. By ELEANOR A. ORMEROD, F.R.M.S., &c. Simpkin, Marshall & Co.

IT has been rather ungraciously said that ladies make but poor scientific observers, because they are likely to display the feminine habit of "jumping to conclusions." Natural science in its various branches has of late years enrolled a large number of patient and enthusiastic lady students, who have already shown themselves able to rival the opposite sex, though their work may have made less noise in the world. Botany has been always a favourite study with the ladies, but entomology has not been successful in enrolling many, perhaps because the operation of killing specimens can hardly be avoided, and this is somewhat distasteful to the gentler sex. Amongst our few lady entomologists well deserved eminence must be given to Miss Ormerod, who has given a practical turn to her studies which merits the gratitude of gardeners and farmers. Her report of observations made last year, if it does not present any specially important features, epitomises excellently the facts noticed by her or reported by others which bear upon the loss and injury caused through insects.

Looking first at that portion of the Report which has most to do with horticulture, we find it sufficiently apparent that 1887 was not a year in which insects made themselves conspicuously troublesome. This is, however, quite obvious, and one is more impressed with the fact as we have recently had to hear much about the bulb mite and its allies, that mites of a variety of species are coming more to the front than formerly. This may not be because these insects are really commoner now than they have been in the past, possibly the explanation is that gardeners and naturalists are observing with more accuracy to what causes the decay and death of some plants is attributable. Miss Ormerod notes the complaints made by growers of the Black Currant, about the gall mite called Phytoptus Ribis, which pierces the leaf-buds in early spring. In Cheshire, a gardener reports that the Black Currants for miles round suffered severely, and in some instances the whole stock of trees was completely ruined, and fresh bushes, brought from a distance, shared the same fate. A grower in Clydesdale gives account of injuries equally serious, and suggests as probable that quantities of these mites descend to the soil later on, hence the advisableness of removing the surface where the bushes have been infested. If it be the case that many of the mites winter in the earth, to ascend the bushes at the time of budding-out, it would be well, Miss Ormerod says, to smear the stems and flower branches with the article called "Davidson's Composition," or some other sticky and deterrent material. The insect does not meddle with the Red or White Currant.

The slugworm of the Pear (Tenthredo Cerasi) was more abundant than usual, perhaps owing to the warm summer. It appeared to show a preference for trees trained on walls, but occurred also in Cherry orchards. It is now established as a fact that the pupation of this insect takes place in the earth, to which the grubs descend about September, burying themselves at a depth of from 1 to 4 inches, and emerging as flies in June or July. These little crown balls should therefore be looked for and destroyed, in the event of any caterpillars having escaped from the dusting or syringing which should be at once carried out when the species has been detected. In some parts of Middlesex, Kent, Herts, and Essex a good deal of damage was caused towards the end of summer to Cabbages, Kale, and green crops by caterpillars of the large white butterfly (Pieris Brassicæ). Miss Ormerod infers from examination of various reports that the Turnip moth (Agrotis segetum) is gradually on the increase; many observers chronicle the injury they did to Swedes, especially during 1887. Though the insect is named from the Turnip, it has frequently been found at the roots of Celery, Spinach, Onions, Carrots, Potatoes, and even Oats. Except while young its proceedings are chiefly carried on underground, hence often unsuspected. Is their multiplication partly due to the diminution in number of those birds which seek caterpillars as their favourite food?

The Hessian fly was again discovered in many localities, but not to any notable extent. It appears to be now almost certain that it is seldom or never imported with foreign straw (as was supposed), because this straw is generally baked before it is used for the purpose of packing. Quantities of the granary weevil (Calandra granaria) have, however, for years past been brought to us with Russian and German Wheats. Recently in the neighbourhood of London this beetle has been found very mischievous with malt.

ROSES.

ROSA POLYANTHA GRANDIFLORA.

THE neat little double varieties of the polyantha type are becoming very popular, and new varieties are becoming quite frequent at the metropolitan shows and meetings. Messrs. Paul & Son of Cheshunt, however, recently exhibited a large single white variety named grandiflora, which the Floral Committee found worthy of a first class certificate on the 10th inst. It is regarded as an improvement upon the old single form of R. polyantha, and originated in France. The flowers are 2½ inches in diameter, with broad rounded petals of good substance and pure white. They are produced freely, and the plant shown was trained in globular form, was a neat and attractive little specimen. To some tastes, however, such Roses as these look better in a more free and graceful style.



Fig. 44.—ROSA POLYANTHA GRANDIFLORA.

A ROSE SHOW IN BRUSSELS.

ARRANGEMENTS have been made for holding a Rose show at Brussels on July 1st and 2nd, in connection with the International Exhibition this year, and the schedule just issued is somewhat different from those we are accustomed to in this country. The prizes are all medals—gold, silver-gilt or silver, and the classes are in two sections, for amateurs and nurserymen respectively. Eight classes are devoted to amateurs, two of the principal being for 150 and 100 varieties of Roses each, with others for fifty and twenty-five varieties, and collections, the number not specified. Seven classes are appropriated to nurserymen similar to the

preceding, and one is open to all exhibitors—namely, that in which two medals are offered for the best seedling Rose not in commerce. Nurserymen often find a difficulty in making up their stands of seventy-two varieties, but it would puzzle many to exhibit a collection of 150 good blooms of distinct varieties on one day. British amateurs can seldom show in a larger class than for forty-eight varieties, and to make up a collection of 150 would tax the resources of the largest rosery. It may be remarked, however, that in the classes mentioned, "Roses of all kinds" are admissible, so that they would not be confined to the Hybrid Perpetuals and Teas, as is usual here in large classes.—S.

THE NATIONAL AURICULA SOCIETY.

(SOUTHERN SECTION.)

APRIL 24TH.

CONTRARY to the expectations of some growers this Show, both in numbers of exhibitors and quality of flowers, was quite up to the average, and, as is remarked by a correspondent in another page, the recent spell of fine weather had assisted the plants surprisingly. The Show was crowded by visitors during a good portion of the afternoon, and it must be chronicled as the most successful of the gatherings yet held in the new quarters, the Drill Hall, James Street, Victoria Street. Two central tables were devoted mainly to the Auriculas, and that the display was representative not only of the south but the north may be judged from the fact that competitors entered from as far north as Warrington.

Numerous seedlings were shown, but only the three following from the Rev. F. D. Horner gained first prizes—namely, green-edge Monarch (Horner), grey-edge Irreproachable (Horner), and self Constance, a second prize being awarded for Mrs. James Tinsley (Bolton) in the self class, shown by the raiser. A first-class certificate was adjudged for—

Alpine Auricula Sir Trevor Lawrence (Barlow).—A beautiful variety with large even flowers, gold centre, and rich rosy crimson colour, shading to a light edge.

SHOW AURICULAS.—The greatest interest invariably centres in the class for twelve Auriculas, as it is in this that the leading growers test their strength, and, as the friendly rivalry is strong, it is naturally expected that there will be found the best plants and the finest varieties. Notwithstanding the unfavourable season, which might have been supposed to be much against the northern exhibitors, the Rev. F. D. Horner, Lowfields, Burton-in-Lonsdale, Kirkby Lonsdale, succeeded in obtaining the chief honours in the class with vigorous plants, fine trusses, and beautifully even, clean, well-developed flowers. The self varieties were especially noteworthy for their richness and fine quality, and nine out of the twelve varieties represented were raised by Mr. Horner. They were as follows—Laura, a fine truss with eight large pips; Hypatia, also strong, with the same number of pips: Heroine, remarkably handsome, with a grand truss of eleven pips; Ebony, extremely dark, with five pips; and Sapphire, charming, with a truss of twelve pips. All these are self varieties, and the last-named was well represented in several other collections. The edged varieties were George Lightbody (Headly), excellent, with five good pips; Magpie, five pips; Sea Gem, a pretty green-edge, with four pips; Kestrel, another beautiful green-edge, with five pips; Prince of Greens (Trail) with seven pips; and Edith Potts (Bolton), which was awarded the prize as the premier Auricula in the Show. It is an admirable green-edge variety, the plant bearing a fine truss of five pips. Second honours were accorded to F. Whitbourn, Esq., Great Gearies, Ilford (gardener, Mr. J. Douglas), whose collection was a capital one, more even than the first, with good trusses, but not quite such large flowers, though they were of excellent quality in several cases. The following seven varieties were raised by Mr. Douglas—namely, Mrs. Moore, seven pips; Mabel, seven pips; Abbé Liszt, eight large pips; Marmion, eight pips; Dignity, a fine self; Neatness, a green-edge, with eight good pips; and Sir W. Hewett, a self with eleven pips. The other varieties were Rev. F. D. Horner (Simonite), very strong truss with eleven pips; Sapphire (Horner), beautiful, nine pips; Reliance (Mellor), seven pips, not quite out; Smiling Beauty (Heap), nine pips; and Frank (Simonite), eight large pips. The third place was won by Mr. T. E. Henwood, Hamilton Road, Reading, who had healthy plants and neat but not large flowers, Conservative and Sapphire being his most notable varieties. Mr. W. Bolton, Warrington, was fourth, showing several fine selfs, amongst which a bright red seedling (Bolton) had large showy flowers. Sapphire and Mrs. Douglas were also well represented. S. Barlow, Esq., Stakehill House, Castleton, Manchester, was fifth with nearly all seedlings, comprising a good green-edge and some fine selfs. These sixty plants formed a most interesting class, and there was quite a little crowd of visitors and specialists criticising and praising the plants during the greater part of the afternoon.

In the smaller classes there were five and six competitors each, so that about seventy plants were staged in the three following. With six the Rev. F. D. Horner again secured the chief place, showing Prince of Greens, Heroine, Mélainie (Horner), a rich dark self, Miranda, George Lightbody, and Neptune (Horner), a beautiful green edge. Mr. T. E. Henwood followed, showing good plants of Acme, Sapphire, and John Simonite. Mr. Douglas was third, his examples of Smiling Beauty (eleven pips) and Ajax (nine pips) being unusually fine. J. T. D. Llewelyn, Esq., Penllergare, Mr. Bolton, and Mr. S. Barlow were fourth, fifth, and sixth respectively. Amongst the five competitors with four plants Mr. G. W. Wheelwright, Oxford Road, Reading, was first for creditable plants of Heroine, Reliance, George Lightbody, and Rev. F. D. Horner, followed by Mr. C. Phillips, Hamilton Road, Reading; Mr. W. L. Walker, Earley, Reading; Viscountess Chewton, Bookham Lodge, Cobham (gardener, Mr. A. J. Sanders); and Mr. J. Kew, London Road, Southend. For two plants Mr. Wheelwright was again first, staging Black Bess (Woodhead), a very dark and fine self, with nine pips, and Rev. F. D. Horner, having ten pips not fully expanded. Mr. C. Phillips was second, showing Othello (Netherwood) and Acme; Mr. A. J. Sanders third for Acme and Lady Sophia Dumaresque (Lightbody); Mr. L. Walker fourth with Acme and Gipsy (Mellor), and Mr. H. Spurling, The Nest, Blackheath, fifth, with Acme and C. J. Perry. It will thus be seen that four out of the five competitors exhibited Read's Acme.

Single Specimens,—Some confusion occurred both in the staging and affixing the prize cards in these classes, but we have endeavoured to correct the awards from the revised official list. *Green-edge*.—Mr. Henwood first and fifth, with Prince of Greens; Mr. Phillips second and fourth, with Rev. F. D. Horner and Prince of Greens; Mr. Wheelwright third and eighth, with Lancashire Hero and Talisman; Mr. Douglas, sixth, with Lancashire Hero; and Mr. Bolton seventh, with Rev. F. D. Horner. *Grey-edge*.—Mr. Sanders first, with George Lightbody; Mr. Wheelwright second and fifth, with Lancashire Hero and Mrs. Moore; Mr. Douglas third and fourth, with Mabel; Mr. Bolton sixth and seventh, with Greyhound and Quicksilver; and Mr. Henwood eighth, with Richard Headley. *White-edge*.—Mr. Douglas first and second, with Conservative; Mr. Horner third and fourth, with Heatherbell and Pearl; Mr. Phillips fifth and seventh, Mr. Sanders sixth, and Mr. Henwood eighth, all with Acme. *Selfs*.—Mr. Horner was first and second, with Heroine; Mr, Bolton third, with Sapphire; Mr. Wheelwright fourth and eighth, with C. J. Perry; Mr. Phillips fifth, with an unnamed variety; and Mr. Henwood sixth and seventh, with Negro and Duke of Albany.

Two groups of fifty Auriculas each, not less than twenty varieties, and including Alpines, were contributed by Mr. J. Douglas and Mr. C. Turner, Slough, who were awarded the first and second prizes in the order named. The plants from Great Gearies were strong healthy specimens, and represented some of the best varieties. Mr. Turner's plants were not quite so large, nor was the collection quite so diversified in appearance.

ALPINE AURICULAS.—Those who have not been educated to the refinements of the Show varieties of Auriculas can always appreciate the Alpines, which with their soft or rich tints and free habit of growth possess a much greater decorative value than the others. As a display the classes devoted to these were much more effective than the Show varieties on the opposite table, but they did not possess the same interest for some of the enthusiastic growers of the old school. Mr. C. Turner was as usual very strong in the Alpine classes, and both for twelve and six plants was easily first. The premier twelve contained John Laing, Ernest, C. Turner, Sir H. Darvill, Sunrise, Edith, Fred. Bates, Sensation (of a peculiarly deep velvety crimson shade), Lady H. Grosvenor, G. Wheelwright, Marguerite, and Lady H. Crewe. Most of these are varieties raised at Slough, and they formed a handsome, bright, and varied collection. Mr. Douglas was a good second, his plants were fine, but the varieties not quite so distinct. Mr. G. W. Wheelwright was third. Mr. Turner's leading six included Sunrise, Edith, Madonna, Reginald, Mr. Stafford, and Lady Crewe, of similar merit to the preceding; Messrs. Henwood, Douglas, Walker, and Wheelwright securing the remaining prizes in that order amongst eight competitors. The best four plants came from Mr. Henwood, bright and beautiful examples of Princess of Wales, Edith, Hotspur, and Mrs. Ball; Messrs. S. Barlow, Walker, Spurling, and Llewelyn following.

Single Specimens.—Gold centre.—Mr. C. Turner, first and third for Pallas and T. H. Henwood; Mr. Barlow second and fifth for Mrs. Meiklejohn and Diadem; and Mrs. Douglas fourth for Hebe. *White or cream centre*.—Mr. Barlow first with Susie Matthews, Mr. Douglas second with Queen Victoria, Mr. Henwood third with Lady Love, Mr. Wheelwright fourth with the same variety, and Mr. Turner fifth with Lady H. Crewe.

POLYANTHUSES.—The exhibitors of the beautiful old gold-laced Polyanthuses are never numerous, and attractive as the plants are they do not seem to find favour with an increasing number of growers. There are rarely more than three or four who compete for prizes, and on the present occasion Messrs. Barlow, Douglas, Llewelyn, and Dean shared the prizes between them. Mr. Barlow's plants were in good trim, especially his premier six, which included Exile, Lancer, Prince Regent, Sir Sydney Smith, Cheshire Favourite, and George IV., all well-known varieties. Mr. Douglas had similar varieties, but Red Rover was notable amongst them. The third place was taken by Mr. Llewelyn. For a trio of plants Mr. S. Barlow won first prize with Exile, Cheshire Favourite, and George IV.; Mr. Douglas was second, having the same varieties, except that Lancer replaced Exile; and Mr. R. Dean followed with seedlings of a rather promising character. In the single specimen class the variety George IV. secured first and second prizes for Mr. Douglas; William IV. and Lancer from Mr. Barlow were third and fourth, and Cheshire Favourite from Mr. Dean fifth.

FANCY VARIETIES AND PRIMULAS.—The several classes for these contained many garden plants of sterling value, especially amongst the hardy single and double Primroses and Polyanthuses. Fancy-Auriculas were shown by Messrs. Barlow and Douglas, which were respectively first and second with twelve varieties. The Stakehill plants were mostly seedlings, the flowers being shades of yellow, buff, and brown, very peculiar but scarcely beautiful. The Ilford varieties included yellow and creamy white tints, one named Twilight, nearly white, bearing quite a ghostly appearance. Mr. R. Dean exhibited the best twelve Fancy Polyanthuses, and the same number of single Primroses,

all exceptionally good, seedlings of bright colours and strong habit. Messrs. Douglas and Paul & Son followed in these classes, the last named gaining first honours for six double Primroses, the Double Sulphur, White and Purple, with the pink and white Harlequin and the mauve Croussei plena being the best. Mr. Douglas and H. Selfe Leonnard, Esq., Hitherbury, St. Catherine's, Guildford, being second and third.

J. T. D. Llewelyn, Esq., was adjudged the chief award for twelve Primulas, the collection comprising excellent plants of rosea, denticulata, officinalis var. suaveolens, cortusoides, obconica, japonica, involucrata, the yellow Auricula, and a small flowered variety doubtfully named erosa. With half a dozen Primulas Mr. Barlow took the lead with capitally flowered plants of obconica, denticulata, floribunda, nivalis, rosea, and viscosa; Messrs. Paul & Son following closely.

There were several exhibits of Primulas that are noted in the report of the Floral Committee, but the non-competing exhibits under the Auricula Society were few. The most noteworthy were plants of a double yellow Auricula with undulated petals, giving the flowers a fringed appearance.

A luncheon was held in the afternoon at the "Hotel Windsor." There was a good attendance of members and friends, presided over by Sir Trevor Lawrence, Bart., M.P., supported by some members of the Council of the Royal Horticultural Society, the vice-chair being occupied by Mr. Samuel Barlow, the eminent northern florist, who was also supported by a portion of the Council.

CROPS THAT PAY.

Onions.—The season has been anything but favourable for autumn-sown Onions. It is true they have struggled to grow at different times, but have by sudden changes in the weather been repeatedly checked. The rows will be thinned and the thinnings transplanted on deeply dug well manured land 1 foot between the rows and about 4 inches between the plants. By planting in rows the ground is easily kept clean by freely working the hoe amongst them. Nothing promotes rapid growth more than constantly working the soil and strewing between the rows during showery weather a little nitrate of soda or sulphate of ammonia two or three times during the season. This should not be done before the bulbs commence swelling freely, or they are liable to run to seed. In planting only secure the roots in the soil; it is a great mistake to plant them too deeply, for they swell better when the greater portion of the bulb is above ground. The crop transplanted remains upon the ground and is ripened as early as possible, so that they can be disposed of before any of the spring-sown crop finds its way into the market or foreign produce is sent over. Hoe between the rows when the surface is dry, and a dressing of soot may be given with advantage during showery weather after they are once growing freely. These should not be severely thinned, for if a crop is to be ripened on the ground the final thinning must take place when they are large enough for bunching.

Our practice is to ripen only the transplanted crops and dispose of the others in a green state. This has proved the most remunerative course, as a profitable crop of white Turnips for bunching or Leeks can be taken from the same ground afterwards. Last summer was certainly an unfavourable one for Onions, and our crops were lighter than they have been for years; but the price has been good, and with good management they can be grown to pay.

Onions will follow almost any crop, but for years we have avoided sowing them on ground that has previously been occupied with any of the Brassica tribe. If this course is followed they are on most soils certain to be destroyed by grub. One of the worst practices is to plough or dig in the old stems of Cabbages or Broccoli. This may sound well scientifically considered, but while they doubtless return to the soil a certain amount of plant food that would otherwise be carried away, on the other hand they do more harm than good by providing food for the preservation of grubs and other insects to ravage the succeeding crop. My advice is burn them, for this is a certain method of destroying any insects that may be lurking about. Onions like deeply dug well manured soil, ground that has been turned up in early autumn being most suitable, for it invariably works well, and an excellent bed for the seed is the result. The manure is forked in if possible the same day as the seed is sown, and a good dressing of soot is applied at the same time as the manure. If a fine day is selected for the operation the surface dries quickly, and a roller is passed over it once or twice. Shallow drills 1 foot apart are drawn and the seed sown. The seed is covered by merely drawing the back of a large wooden rake over the drills. This leaves the drills visible, and the hoe can be first used directly they commence showing through. When the hoe is at work thus early it is surprising how much easier the ground is kept clean than is the case if the weeds are allowed to establish themselves before an attempt is made to eradicate them. The varieties grown were Bedfordshire Champion, Brown Globe, and James' Keeping, but the first only finds a place now. Why? Because it produces on our land a heavier crop of larger produce than the last mentioned, and Brown Globe in some seasons produces too many "thick necks." Flat Onions, either for autumn or spring sowing, are useless for market purposes; they do not pay, they are too light in weight. Thinning is not practised to a large extent, and then if a few go off by grubs or mildew there is almost certain to be a crop. What are drawn are left until they are large enough to bunch and sell.

Leeks.—Lecks pay very well as a second crop, and fortunately are not much trouble. They are a more certain crop than such Broccoli as Snow's, Osborn's, Veitch's Spring White, and others that turn in about the same time. Without considerable labour and expense in protecting the latter they are very liable to be killed by severe frosts, or to be rendered useless just as the heads appear. The last is generally their fate, and consequently they must, for all situated as I am, give place to crops that are certain to pay. My advice to each one is, Study the locality in which you reside and plant accordingly, for it is much better to dispense with the second crop than have three parts of a first crop in order to provide for a second that is an uncertainty. Leeks then are a sure crop, and the seed for the main crop is sown by the side of the Onions, only much thicker. Most plants are spoiled in their early stages by being sown too thickly or left too long before they are thinned, but Leeks seem to be an exception to this rule. They certainly draw up quickly, and attain a greater length before they are planted, which is a decided advantage.

To give some idea of our method of sowing, I may say 1½ oz. is enough for two rows 23 to 25 yards long each. The plantings from these are for winter and spring supplies, while those for use up to Christmas or for a time after are raised by sowing in boxes. These are dibbled out during showery weather, moderately thick on any spare patches of ground. This crop follows early Potatoes (sometimes Lettuces) that are planted 2 feet from row to row. After the Potatoes are dug moderately deep drills are drawn one foot apart. If the ground is dry the drills are soaked with water, but we avoid this operation if possible, it is too costly, and soon tells heavily against the crop. It is sometimes necessary. The Leeks are planted in these trenches with a dibble, the only care needed is to have the holes deep enough so that the roots go straight down, and do not bury the heart of the plant. These are placed in the row 7 inches apart. The drills made are filled by using the hoe amongst the plants. By this method of planting the greater portion is well blanched at lifting time without further trouble. These seldom attain the same size as those planted for lifting during the months of March, April, and as long as they can be kept. Two and three, according to their size, are placed in bunches, after the soil has been washed from their stem and roots, and twelve bunches are tied in a bundle. In spring, when they have attained a fair size, one practically forms a bunch; in fact, I have had no difficulty in selling them by the dozen. Those sown outside very frequently follow a crop of Cabbage, early Cauliflowers, or late Broccoli, with us generally the two first. These are planted the same as the others, only 2 inches farther apart, and the ground is dug, which is not done when planted after Potatoes.

Leeks will be doubly appreciated this spring, for green vegetables are scarce. Spring Cabbages are late, and in some instances have disappeared where the plants were small and weak at the approach of winter. Leeks keep a very long time in good condition if lifted now and laid in behind a north wall, a hedge, or anything that will answer the same purpose.

I promised to detail how to grow a late crop of Tomatoes, and for this purpose the seed should be sown at once. Further instructions shall be given in time to be of service.—Marketer.

GLADIOLI NOTES.

The Time for Planting.—Although in a few respects my experience differs from that of "D., *Deal*," described on page 295, these few notes may be considered supplementary as with most of that article my results, extending over nearly twenty years, agree. Mr. Kelway was right in saying "seasons govern results," and this applies also to planting. The major portion of my corms, say 400, were planted in mid-February, as during January and up to that time here the weather was spring-like. Had I known what was coming I should have kept them out of the ground then. However, I now see many "spearing" through the beds, and though, owing to the low temperature of the soil, a few may have decayed, I am not sorry to have planted so early. The Gladiolus adapts itself to different treatment, so much so that those who plant now may have splendid spikes of bloom before frost next December. I was rather surprised to find that Mr. James Douglas likes to begin planting on the 1st of March and finishes about the 1st of May, at intervals of a fortnight, the object presumably being to have them blooming at different times over a more extended period. This seems unnecessary, as planted at the same time, one (say Shakspeare) will bloom in July or the beginning of August, and no amount of induce-

ment will make Duchess of Edinburgh, James McIntosh, or Phœbus expand their enormous blooms before the end of October; indeed, last year I had them flowering the first week in December.

Soil.—"D., *Deal*," formerly "gave a preference for Gladioli-growing to a good friable loam," but more recently seems to think with Mr. Burrell of Cambridge that better results are attained where the soil is calcareous and stiffer. In Ireland, as far asunder as Saunder's Nurseries of Cork, and Dickson of Newtownards, splendid spikes with twenty-two blooms each are freely grown on the former soil, and I certainly have better results with a deep rich sandy loam. I add the sand with the corms. I believe I am correct in stating neither Mr. Kelway of Langport, nor Mr. Campbell of Gonrock, N.B., grow on a calcareous soil, and your correspondent bears ample testimony to their success. I only grow as an amateur, and raise none from seed and little from spawn, yet my stock has steadily increased. I cannot justly complain therefore of disease, exhaustion, or degeneration.

Aspect to Grow in.—Unquestionably a gentle southern slope, unshaded, and fully open to sun heat and to a maximum of ripening and maturing influence, is one of the great agencies that command success. The corms must be ripened, or failure will result. The ripening or maturation can only take place through the foliage. If anyone contests this let him try and grow a bed—all things else being equal—in a northern or shaded aspect, say at the back of a house, and note the result the second or third year. I ought to add that I assist the maturing process by taking my plants—those with the attached stems not quite withered—indoors at the end of November; surround the corms with moist river sand, and then let them slowly "dry out." They come thus crisp, dry, and hard as bullets. I once spoke on this subject with Mr. F. W. Burbidge; he told me the champion gentleman grower of Ireland, J. F. Lombard, Esq., Rathmines, grows his under such circumstances on a warm southern slope.

Varieties.—I see your correspondent, in common with Mr. Campbell already referred to, divides the list of varieties given according to their time of blooming, into four classes, but where the same are named in both lists they do not always agree; for instance, Agrius, Carnation, Horace Vernet, &c., are early flowering with "D., *Deal*," and later at Gourock. The difference of latitude may, however, account for this. The time of planting, too, may affect the result. With many amateur and gardening friends we greatly admired the champion stand of upwards of one hundred different varieties staged by Messrs. Kelway at Kensington last August, and were then told those magnificent spikes were all English raised. Admitting this, have the French ever raised anything finer? I can bear personal testimony to the following English raised, and not included in the list given at page 296; I need not ask your space for description, as Messrs. Kelway's, or any other grower's catalogue, will give it, but all are distinct—Duchess of Edinburgh, James McIntosh, Pictum, Marquis of Lothian (sent out by Campbell, 1875), Brennus, Rev. H. H. and Mrs. D'Ombrain, Sir Stafford Northcote, Maria Lemoine (Lemoine), Mr. Thornton, Electra, Calliphon, Chambers (Dickson), Marcianus (fine), Appianus, Countess of Glentworth, Lady Bridport, Hankey (Dobree), Perry Rise (Carter), Egyptian King, and Anthony Waterer. A capital score, that all who can afford it should have, without including new varieties.—W. J. Murphy, *Clonmel*.

The "Notes on Gladioli" by your correspondent, "B.," on page 319 will have astonished many who, as well as myself, have come to accept as inevitable the loss of a varying per-centage of their corms annually. For a dozen years I have striven to attain the end "B." seems to have reached, and have spared neither time nor trouble to do so. I think I have tried every recommendation I have read or heard of in the matter of soil, time, and mode of planting and after treatment, and I do not hesitate to claim a measure of success fairly comparable with that of other growers of the Gladiolus with whom I am, or have been, acquainted. Although among these are not a few in different parts of the country who have gained a reputation in the cultivation of this flower, I would seem to have an affinity for the unfortunate, as not one of them would say "I know hardly anything about" the disease to which the Gladiolus is subject, nor are they among the "many growers who are not troubled with it." This last season I lost just about my usual proportion. My friend, Mr. Campbell of Gourock, informs me that his loss fully exceeds his general average; another acquaintance that while he has not much cause to complain, two varieties that generally keep well with him have all but disappeared. By personal inspection of one large consignment from France, and by report from one of our leading houses on another, I know that imported corms are unsound to an unusual extent. Fortunate "B.," whom I envy but cannot hope to emulate!

But what does the closing remark in the last of the three paragraphs mean? "Some, &c., do not succeed here." It cannot be, surely, that in a locality so highly favoured the sorts specified do not grow and flower. Varieties as late as any of them seem to succeed, why not these? Is even the latest not amenable to the earlier starting in boxes or pots; or wherein are they refractory? Does Mabel or Ondine, or Orpheus or Opale, to mention no others, remain good for years with "B?" I have had frequently to renew these, and I know other growers with whom they fail as frequently. Some varieties, although even among them failures occur, increase until one is able to give away surplus corms. I might mention, with others, Camille, Marquis of Lothian, Mrs. Finney, Talisman. As to Duchess of Edinburgh, of which "B." says, "Anyone who knows the Gladiolus will see at once the impossibility of growing this variety a second year," let me state my experience. Six years ago I obtained one corm from Mr. Kelway. I have never bought or had another. The Duchess has flowered only twice with me, but it has increased until last year, when seven plants flowered splendidly. I have given away to friends at least three other corms, and one or two have decayed.

I cannot help inferring from this contribution by "B.," as well as from another by him on pp. 188, 189, that he grows the Gladiolus mainly for garden decoration. Not to mention some of the varieties he seems to favour, I know no one who tries to do the noble flower justice who would allow, much less boast, of four or five stems from one corm. The term "growth" is used both for one stem and for all produced from one root. "Seventy-eight flowers were produced by one growth," must mean at least three stems with their side spikelets. Tastes differ, but I would not consider my garden decorated by such Gladioli tufts or bushes, or allow any variety I have to grow and bloom in this random way. I cannot think the Gladiolus can be had in perfection when so treated, or many of our cares are expended in vain. What excellence might not "B." attain! a grower with whom Mabel and Leander reach 6 or 7 feet in height, and who is all but exempt from that plague which so vexes others.

Of the newer sorts, Enchantress and Pasteur are two apparent acquisitions. As I saw both last autumn, the former, if it stretch enough in spike to allow the large flowers to clear each other sufficiently, is really good, and Pasteur is a smooth-edged flower of good form and pleasing colour. These seemed the best of the more recent additions that were then in flower at Cove Gardens.—A Northern Amateur.

KEEPING GRAPES.

Nothing new appears to have been discovered for many years past as to the method so well known of keeping Grapes late in the season, neither are there any suggestions as improvements on the practice of keeping the fruit late by the aid of bottles and water. We might go a little further, and state that no improvement has been made in the varieties for late keeping which have been so popular for nearly a quarter of a century. I have practised the water-and-bottle system for about twenty-five years to keep Grapes until May, and sometimes until June, and I have tried all varieties for general usefulness which I have seen recommended in horticultural literature, but still depend on Lady Downe's Seedling, which is at the present time, the middle of April, as fresh in appearance, fine in colour, densely covered with bloom, and of as good flavour as they were last autumn. I have never yet been persuaded that the fruit deteriorates in flavour when well prepared in the previous season for keeping, and managed so that the waste of water from the bottles has been nil. Gros Colman is said by some to be rapidly taking the place of Lady Downe's, but I do not think it ever will for private consumption, especially if proprietors' palates have been long accustomed to fine flavour. For market purposes the larger varieties such as Gros Colman would probably command a more ready sale than Lady Downe's. I have had no difficulty in keeping Gros Colman until April plump, fresh in berry and footstalk, and little changed in flavour, but I could not place it on a level as to flavour with Lady Downe's.

Alicante, too is very useful for late supplies. The berries retain their bloom well to the end when kept late, but their tough skin renders them of secondary value for dessert. White Tokay has kept unusually well until April this season, though slightly limp in the skin, and had an imposing appearance to the last, the bright golden colour being always attractive in conjunction with the black varieties. Though we have kept, in addition to the above-named, others including Gros Maroc, one which I have never tasted of good quality at any time from numerous gardens, keeps fairly well, but the skin becomes like leather. Its appearance makes it an attractive variety in market, and there purchasers are often deceived when they find its good looks are not supported by good flavour. St. Peter's, Gros Guillaume, and Black Morocco have been pitted against Lady Downe's for late keeping, but it has outdistanced all comers, and horticulturists are deeply indebted to Mr. Thomson, Clovenfords, for reintroducing such a valuable variety when it appeared for some time to have been shelved.

Our means of keeping are a line of cupboards around the walls of our office with closely fitting doors, which answers well. Heat from hot-water pipes can be turned on at pleasure, but has been little needed during the past winter. We never found Grapes keep better than in a room at our disposal over stables, where Apples and Pears were kept in quantity, and there were no means of applying heat artificially.—M. T. C. H.

THE GHENT SHOW.

New Plants.—Reference to these was omitted from our report last week. They were not so numerous or so remarkable as one would have expected, and the classes, twelve in number, were poorly represented. In the principal class for twenty plants (flowering or non-flowering) there was but one collection, which was from M. L. Jacob-Makoy & Cie., Liège, who also showed in other classes for new plants most largely. The twenty plants consisted for the most part of fine-foliaged plants, the most noteworthy being Labisia Malouana, a Myrsinaceous plant, having large and rather broad leaves of a rich bronze green with a bright central band of silver. Another bright-foliaged plant was Aphelandra Louisæ, in the way of A. Leopoldi,

the leaves being broadly lanccolate, of a deep green marked with broad transverse lines of silver white. A noble Bromeliad named Broechinia Andreana with broad leaves 3 or feet long was conspicuous in the group, as was also Philodendron Corsinianum, having huge leaves deeply lobed and of a rich bronzy green. Nephthytis picturata, just introduced from the Congo, having bold leaves with silvery variegation, was another ornamental Aroid. The rest of the collection was made up of Alocasia Pucciana, A. Leopoldi, A. Lindeni, Encholirion roseum fol. variegatis, Curmeria Leopoldi, Croton Alexander III. (not remarkable, being too much like older sorts), Dieffenbachia gemmata, Canistrum leopardinum, Hoplophytum robustum variegatum, Pandanus D'Haenei (very handsome foliage), Anthurium leodiense, Phrynium variegatum, Eugenia oleæoides elegans, Bismarckia nobilis (a handsome Palm), Dieffenbachia Kerehoveana, Caraguata Peacocki fol. ruhra, and Pandanus Desmetiana. The collection of six new plants also came from M. Jacob-Makoy. It included some of the foregoing plants, and Inga Glazouviana, Amomum vittatum, and Nidularium Makoyanum.

In the class for ten plants recently put in commerce there was but one collection, M. W. Fr. Deshois & Cie, of Mont St. Amand. In this the most noteworthy were Begonia Arthur Malet, one of the Rex section, with large leaves of a deep claret purple, broadly zoned with violet purple; Boronia heterophylla; Polygonatum multiflorum, variegated Solomon's Seal, with silver veined leaves, very pretty; Phytolacca decandra variegata, Adiantum schizophyllum, Dracæna Doucetti, Phrynium variegatum, Begonia Louise Closon, Epacris onosmæflora, and Pandanus Desmetianus. The classes for single specimens of new plants were better represented.

The class for a new flowering plant was well contested. The highest award was taken by M. J. Hye-Leysen of Ghent for his remarkable new Cypripedium Hyeanum, a variety of C. Lawrencianum, with flowers wholly bright green and white. It was considered one of the most remarkable plants in the Exhibition. It was shown in London last year. The second prize was taken by M. E. van Geert for Boronia heterophylla, the lovely New Holland plant, which has been shown in London by Messrs. Veitch this year in such perfection, while the third prize went to M. Jacob-Makoy & Cie. for Vriesia chrysostachys, a Bromeliad with a golden yellow flower spike.

The first prize for a new fine-foliage plant not having been exhibited before was taken by M. Edouard Pynaert van Geert, with the beautiful Begonia Luhbersi, which has medium-sized leaves of a deep bronzy green, adorned with bright silvery blotches. The same exhibitor also took the second and third prizes in this class, the second with the beautiful Dichorisandra pubescens tæniensis, a plant reminding one of Tradescantia zebrina, but with the silvery and purple markings more clear and bright; the third with Alocasia Chantrieri, a handsome leaved Aroid. In the class for a specimen of a flowering stove plant obtained from seed and not before exhibited, was represented by M. Jacob-Makoy, who were first with their Anthurium Makoyanum, and a handsome variety with noble leaves and a bright coloured spathe. M. Pynaert van Geert took the second prize with Begonia President de Boureuilles, a hybrid with bronzy purple foliage, like that of B. incarnata, but with larger flowers of a delicate pink.

The only prize awarded for a new greenhouse plant raised from seed was taken by M. Gust, Gendbrugge, for his Phormium tenax roseum pictum, a variety of New Zealand Flax, with leaves of a bronzy rose tint. M. Ch. Vuylsteke of Loochristy was awarded the first and only prize for a new hardy plant, it being Azalea mollis hybrida flore pleno, an extremely pretty double-flowered variety of a rich flame colour. The above comprises the plants to which prizes were awarded, but many others of interest and value were shown. Among these we noted Anthurium Desmetianum, a form of A. Andreanum, with spathes of an intensely deep crimson, and Nephrolepis rufescens pinnatifida, a new Fern, certificated in London; Anthurium Lawrencianum, a fine variety of Andreanum, Phlebodium aureum alcicorne, with deeply lobed fronds; Tillandsia Lindeni latispatha, with the pink spathes broader than in the type; Phlox decussata variegata, with leaves broadly edged with creamy white; Pteris cretica Mayi, first shown in London; Podocarpus gracilis, a very graceful Conifer from Valparaiso; and Dracæna argentea striata.

THE NEWCASTLE-ON-TYNE SPRING SHOW.

THE Durham, Northumberland, and Newcastle-upon-Tyne Botanical and Horticultural Society held their twelfth Spring Exhibition on Wednesday and Thursday last, April 18th and 19th, in the Town Hall and Corn Exchange, Newcastle-on-Tyne. The above Society was formed in 1824, and ranks as one of the oldest in England, and within the last dozen years has made rapid progress, keeping pace with the best horticultural shows in the United Kingdom. A business Secretary and an indefatigable Committee are always necessary to success, and in this respect the above Society is exceptionally fortunate in possessing. The late season in the north was considered to somewhat mar the prospects of the Spring Exhibition, which has annually increased in merit since its commencement. Happily, however, this was not the case. The Hyacinths have never been better nor more numerous. Azaleas were also excellent examples of good culture. The flowering plants were good, but not so numerous as in previous years. Spiræas, Lily of the Valley, Deutzias, Genistas and other spring blooming plants were shown in great numbers, and were all examples of good culture, and afforded much pleasure to the numerous visitors who attended the Exhibition. The plants were all exhibited in the Corn Exchange, and the staircase leading to the Town Hall was a point of vantage, where a pleasing *coup d'œil* of the Exhibition could be obtained. The Show was well arranged. There were three lines at the base of Cinerarias; next were Spiræas, and at the top were plants of Dielytra spectabilis. These arranged above each other had a most pleasing effect. Amongst the Azaleas, at intervals, large Palms were arranged. The Hyacinths were arranged on stages 4 to 5 feet high, which were easily seen by the visitors. Sufficient width of paths was left between the rows of plants that all could be seen easily. In fact, never on any previous occasion has the arrangement been so complete as it was this time. Appended is a list of the awards, with the names of the principal plants and remarks on their cultural merits.

For four plants, dissimilar, the Society offered £11 in four prizes. The first was won by Mr. F. C. Ford, gardener to Mr. S. H. Pease, Pierremont, Darlington, the plants being an excellent Erica Victoria Regina, well flowered; Tremandra verticillata, an average Clerodendron Balfourianum, and Aphelexis macrantha. Mr. A. Methven, gardener to E. Lange, Esq., Heathfield House, Low Fell, was second with an Imantophyllum, having fourteen spikes and thirty-one flowers on each spike, well coloured; in fact, a marvellous plant, along with a Phaius grandifolius with nineteen spikes, and Erica affinis. Mr. Ed. Adams, Swalwell, was third, and showed some good Ericas. For four Azalea indica, dissimilar, Mr. J. McIntyre, gardener to Mr. G. Pease, Darlington, was first with fine plants, evenly trained and well flowered; they were Azalea superba, Mdme. Jules Lefebvre, Souvenirs de Madame Purdeplabel and Oswald de Kerchove; Mr. J. Short, gardener to Arthur Pease, Esq., Hummersknott, Darlington, being second, his best plants were Azalea Stella and Duc de Nassau; Mr. Methven was third, and the same exhibitor first in the corresponding division for two Azaleas, which were very good, of Comtesse de Flandres and Duc de Nassau. The Society offered £3 10s. for three Orchids, which only brought two competitors, and it might be suggested that at an exhibition like this it would be well to offer larger prizes for Orchids, as at this time there are many in bloom, which make a great addition to an exhibition. Mr. A. Methven was first for three with Dendrobium nobile, a fine plant, Cypripedium Boxalli, and Dendrobium thyrsiflorum with seven spikes. Mr. McIntyre was second with Cattleya Mendelli with two spikes, Dendrobium thyrsiflorum, and Oncidium flexuosum. Mr. Methven, for a Palm or Tree Fern, was first with Kentia Fosteriana very fine. With Dielytra spectabilis Mr. Joseph Runton, gardener to Thos. Hodgkin, Esq., Benwell Dene, was first with bright plants and healthy foliage. First prizes were also won by the following:—For Genistas, Mr. Geo. Corbett, Benwell; for Spiræas, Mr. John McIntyre, Sunderland; for Cinerarias, Mr. James Forsyth, Sunderland; for six Primulas, Mr. F. Jackson, gardener to Alderman Scott, Newcastle; and for six Cyclamens, Mr. McIntyre.

For six pots of Lily of the Valley Mr. Jos. Runton was first. All these usual spring blooming plants merit an extra word of praise, as never have they been shown better than this year. For six hardy Primulas Mr. W. L. Thompson, gardener to C. S. Bell, Esq., Woolsington, was first. It is always a treat to meet these old favourites. With six pots of Scillas Mr. Runton was also first, and for table plants Mr. McIntyre was first with Aralia Veitchi, Croton aighurthensis, Dracæna superba, and Geonoma gracilis. There were in these decorative plants rather a falling off this year. A new feature this year was a prize for Strawberries in pots. Mr. J. Short, Darlington, was first apparently with Keen's Seedling.

For twelve Auriculas Mr. H. Whiting, Killingworth, was first with Frank Simonite, eight pips; Mr. Douglas, three pips; Bizarre Heather Bell, George Lightbody, and Heroine. The varieties Heroine and Mr. Douglas must have greatly influenced the Judges. Mr. E. Oliver, Forest Lodge, was second with fine plants of Col. Champneys and George Lightbody, &c. Mr. Robt. Patterson, Ashburne Gardens, Sunderland, was third, his best flowers being George Lightbody and Ben Simonite. There were six competitors. For six and four dissimilar (Alpines excluded) Mr. W. L. Thompson was first. With green-edged and grey-edged Auriculas Mr. Atkinson and Mr. Oliver were first and second respectively. For twelve Alpines Mr. Jos. Watson, nurseryman, Fenham, was first with Col. Scott, Diadem, King of the Belgians, Slough Rival, and Dolly Varden. For six Polyanthuses Mr. E. Adams was first with Queen of Tyne and Buck's George.

Seven collections of twenty-four Hyacinths were staged, all possessing cultural merits. Messrs. H. Dewar & Co., nurserymen, were first with some magnificent spikes, including Grandeur à Merveille, Lord Derby, Koh-i-noor, King of the Blues (splendid), La Grandesse, Lord Derby, and The Sultan. The silver medal of the Royal Horticultural Society was also granted for this collection. Mr. Jos. Watson, nurseryman, Fenham, was second with excellent plants, including Von Schiller, Fabiola, and Blondin. Mr. Ed. Laidlow, Roker Nursery, was a good third. For twelve Mr. Jos. Watson was first, Gigantea, Koh-i-noor, Mont Blanc, and King of the Blues being fine. In the corresponding class for twelve Hyacinths Mr. Runton was first with grand flowers of Von Schiller, Florence Nightingale, Blondin, Lord Derby, and King of the Blues. The Hyacinths extended all down one side of the hall, and were very attractive to many visitors. There were five lots of twelves staged. For nine pots of single Tulips Mr. Atkinson was first with the usual varieties, and for doubles Mr. James Wood, gardener to H. N. Middleton, Esq, Fenham Hall. For Polyanthus Mr. Jos. Watson was first.

Cut Flowers and Table Decorations.—For twelve Camellias first Mr. James Wood with Alba plena, Jubilee, Imbricata, Wilderi, and others. For twelve bunches of Rhododendrons Mr. F. C. Ford was first with fine heads, but they were unnamed. Azaleas were also the same. Mr. J.

Short was first. For Roses Mr. J. Garrett, Stocksfield, was first. For Show Pansies Mr. Thos. Battensby, Axwell Park, was first, and for Fancies Mr. E. Bailey, Sunderland, was first. Seven epergnes were staged, which were all exceedingly tasteful in their arrangement. Mr. W. R. Armstrong, florist, Newcastle, was first with a graceful epergne. In the top tier was Dendrobium nobile, Spiræas, light Epacrises, Lily of the Valley, and Lapageria rosea and alba, drooping over, suspended by wire. The base was not too heavy, evenly balanced with coloured flowers, and all from the top tier draped with Asparagus plumosus. Mr. A. Methven was second, and employed with much effect Orchids, consisting of Cattleya Mossiæ, Dendrobium Wardianum, Odontoglossum Alexandræ, and Sobralia macrantha. Mr. Dickerson, Thirlwell, Shotley Bridge, was third. Much comment was expressed at the decision of the Judges. In the corresponding class Mr. A. Methven was first; Mr. Thos. Battensby second with similar arrangements to those already described. Table decorations form a considerable feature at the Spring Exhibition. In this class six competed, and in the other seven.

With a hand bouquet Messrs. W. Perkins & Son, Coventry, were first; Miss Emily Armstrong, Newcastle, second with tasteful arrangements, but rather large for any lady to carry. Messrs. Perkins & Son were also first with a bridal bouquet. Ladies' sprays or coiffeurs are new to Newcastle, but produced a most spirited competition, Messrs. Perkins taking the first position. Of buttonhole bouquets about thirty were staged. Mr. James Hewitt, Newcastle, was first with a simple arrangement, consisting of Maréchal Niel Rose, Myosotis, and Euphorbia splendens. Not for competition were stands of decorative plants from Messrs. Wm. Fell & Co., Hexham; Adamson Bros., florists, Rye Hill; J. Jennings, George Place, Newcastle; and Mr. Thos. S. Ware, Hale Farm Nurseries, Tottenham, exhibited a splendid collection of Narcissuses, including twenty-eight varieties, 146 bunches, and occupied a space 40 feet long. Bicolor Horsfieldi, Pallidus præcox, Citrinus incomparabilis, auratus fl.-pl., Cernuus, and Cernuus plenus, Maximus, Sir Watkin, Odorus, and Lincolnshire Yellow.

The financial success has been greater than ever was known before, the sum realised for the two days being £223, which must be gratifying to the Secretary, Mr. Gillespie, and the Treasurer, Alderman Thos. Gray, and Committee.



JAPANESE REFLEXED CHRYSANTHEMUMS.

THE long-talked-of division of the Japanese into sections has at last been accomplished, at least as far as one sub-section is concerned; and as prizes are offered by the N.C.S. for blooms of these in a separate class at the November Exhibition the sub-Committee appointed have done well to publish the names of the varieties that have obtained the majority of votes. Many different opinions will no doubt prevail on this subject, and surprise be evinced to see the varieties Jeanne Délaux, Criterion, and Val d'Andorre included in the list. It is certainly difficult in some cases to know where to draw the line at a reflexed Japanese, weak or strong cultivation making all the difference in some of them; but after this experiment I should like to see other subdivisions attempted another year, and prizes offered for twelve broad petalled varieties, which would include such as Comte de Germiny, Edwin Molyneux, C. Orchard, Sam Henshaw, Lady Lawrence, Mrs. H. Cannell, and Mrs. Wheeler, Japonaise, Madame C. Audiguier, Mr. Cannell, &c.; and for twelve laciniated varieties, which would include those with divided florets, as Meg Merrilies, Ralph Brocklebank, W. G. Drover, Macaulay, Laciniatum, and Album Fimbriatum; and also for twelve with tasselled or twisted florets, which would include Mdlle. Lacroix, Agrement de la Nature, Mons. H. Elliott, Duke of Berwick, Mrs. Mahood, and Belle Paule. The type of the reflexed Japanese, I think, should be varieties with short but regular reflexing or erect florets, which do not twist or curl; Elaine, Triomphe du Nord, and La Nymphe are good types of the old varieties, but there are many of the newer varieties which when they became better known would be grown to be included in this section, varieties with lovely tints and shades of colour which would be lost to cultivation if the competition was always confined to the one section, as now, when large flowers that well cover the board is the chief aim. It is for this reason that I look with favour on this sub-division of the Japanese section, and the four sections I have named would include nearly all the types, but the larger classes would of course always retain the doubtful ones; but there need be no disqualification of varieties. Exhibitors should be allowed to exercise their own judgment, and those that come nearest to the stipulations would of course be considered the most meritorious. It might be considered a tax on private growers to cultivate so many varieties, but the trade, which includes many more exhibitors than formerly, would look after the sub-sections if private growers could not, and in consequence many more beautiful varieties which would be highly prized by the flower-loving public, and grown as decorative varieties on account of their distinct character and colour, would be brought under public notice than would otherwise be if competition is confined to the larger varieties only.—C. ORCHARD.

THE list of these Chrysanthemums which was published in the last issue of the Journal will cause some comment, and perhaps some confusion. Take for instance Jeanne Délaux, Criterion, M. Astorg, and Val d'Andorre. These by the list given are admissible in the new class, and can, of course, be shown in the ordinary Japanese class as well. The sorts named are very likely indeed to be found good enough to go into the twelve distinct varieties of Japanese in the large class at Sheffield. Now the question is, Would either of those named be admissible in the class quoted? We have then one variety, possibly more, staged three times in one class. There is no reason why this should not be done. I think this is where the confusion is likely to occur; some growers will think they are admissible, and others not. My opinion is that if a Japanese reflexed class were wanted at all the varieties should be so arranged that they could only be shown in that class. I fail to see how Val d'Andorre, for instance, can be classed with Elaine with a view to make a distinct stand of Japanese reflexed. Take again Criterion, which was awarded the premier prize for Japanese variety last year at Kingston, and is staged in nearly all stands, large or small, in ordinary Japanese classes.

If the list as given is to be binding it should be stated whether or not the same variety can be staged in the same class in both the Japanese and Japanese reflexed sections. This would be a guide to all persons concerned who intend to exhibit or who do not. By this means matters would be simplified.—A YORKSHIREMAN.

[It was clearly stated last week that "the varieties named as Japanese reflexed are only excluded from the true reflexed class, they can be shown in all the Japanese classes as before." This rule was adopted to prevent the confusion our correspondent fears.]

THE Committee of the N.C.S. acted wisely in issuing the select list of the Japanese reflexed Chrysanthemums, and that has placed the matter before intending exhibitors as plainly as possible. The majority will find the first twelve varieties sufficient, and I shall try to make up a stand from them for one of the Society's shows.—A SURREY GROWER.

LATE FLOWERS OF BELLE PAULE.

I HAVE sent two blooms of Belle Paule Chrysanthemum with various sized buds for you to notice, not for exhibitions, but as a late-flowering variety. The cutting I had from Mr. Cannell was inserted on February 8th, 1887. The plant commenced flowering in the early part of December with good blooms, and has continued flowering ever since. We have thirty blooms open and various sized buds. The plant is in a 9-inch pot, and the stem at the base is 4 inches round.—W. DRAY.

[The blooms sent were rather darker in colour than they are usually seen earlier in the year, with the purplish hue not confined to the margin of the florets. They are of moderate size, and undoubtedly useful at this time of year.]

CHRYSANTHEMUMS IN APRIL.

I RECEIVED a few days since, by the courtesy of my friend Mr Kipling of Knebworth, a box of Chrysanthemum blooms, which have, I confess, fairly astonished me both in regard to their size, quality, freshness, colour, and general excellence. I have long shared the oft-expressed opinion that we do not require Chrysanthemums at this season of the year, and that after, say February, they should be eliminated from our lists of cut flowers until September, even then giving the autumn queen a full six-months reign. With these lovely flowers, however, before me, I am compelled to acknowledge that they would be a valuable acquisition at any period of the year, and for table decoration especially. I write now, not as an over-zealous enthusiast, but simply as one who recognises the value of good and suitable flowers of any sort. I venture to say that any decorative florist would endorse my views in regard to the usefulness and beauty of these flowers, and no matter what season of the year, would look upon them as an acquisition.

The varieties principally are Belle Paule, Etoile du Midi, Kæmpfer, and Madame Cabrol. Mr. Kipling gives the preference to Belle Paule for freeness, sureness, and general adaptability for late cutting, and certainly the flowers of that variety he sends me fairly warrant his opinions. They are not pale as might be supposed, but have a high flush of colour on each petal. The florets are stiff and have a good substance, and although they are grown naturally, and so have four or five flowers on a truss, the leading flowers are 5 inches over with good full centres. The varieties sent form a complete bouquet in themselves, in colours from the deep bright crimson of MM. Thibaut et Keteleer, or some very similar variety, to Belle Paule's rosy purple hue, and to the orange and amber of Etoile du Midi and Kæmpfer, &c., a truly lovely contrast.

Mr. Kipling has achieved much in the production of these blooms, and it would be most interesting to know his exact procedure. He informs me he has up to this date sent a box of similar flowers to Paris each week for Lady Lytton, who is a great admirer of Chrysanthemums and a patroness of our N.C.S., and that from the present condition of his plants he considers it as almost a certainty that he will continue to cut a similar supply until the summer sorts show colour, thus spanning the whole twelve months with cut Chrysanthemums, a truly remarkable achievement for any single establishment.—WILLIAM HOLMES, *Hon. Sec. National Chrysanthemum Society.*



HARDY FRUIT GARDEN.

SUMMER-PLANTED STRAWBERRIES.—Last summer the runners were both late and weak, and as a consequence those permanently planted did not make nearly so good a start as usual, the season from beginning to end being most unfavourable to Strawberries. In some instances the plants may be sufficiently strong to produce an early crop of fine fruit, but as a rule they ought not to be allowed to bear any this season, all bloom being pinched out as soon as possible; this will encourage the plants to grow strongly, and ought to lead to the production of extra heavy crops next season. The frequent and severe frosts experienced last winter had the effect of much loosening the ground, and as a loose rich root run favours the growth of leaves rather than of good crops of fruit, it is advisable to well trample it again, more especially close to the plants. This refixing of the plants in the soil is necessary whether they are to be fruited this season or not. It ought to be a very difficult matter to push a stake into a Strawberry bed, and where the soil of established beds is at all loose a heavy trampling will prove beneficial. This should be done in dry weather, and be followed with a light surface stirring with flat hoes.

FORMING AND CROPPING NEW STRAWBERRY BEDS.—The spring is a good time to form fresh beds, the young plants transplanting readily with a trowel from the beds in which they were thickly dibbled last summer or autumn. Either new or old varieties can also be obtained from the nurseries, and if such novelties as Laxton's Noble, Captain, Jubilee, and King of the Earlies are procured and well attended to, a few good runners may be obtained from most of the plants. The best of the old varieties are Vicomtesse Hericart de Thury, Keen's Seedling, Sir J. Paxton, President, Dr. Hogg, Sir C. Napier, Traveller, Loxford Hall Seedling, and Eleanor. All of these are of fairly vigorous habit, and may be planted in rows 30 inches apart, a distance of 18 inches dividing the plants in the rows. They require well manured deeply dug ground, should be firmly planted and watered in. A piece of ground well prepared for Onions would just suit Strawberries, and there is no reason why the latter should not be planted among the former as soon as these show through the ground. Three rows of spring-sown Onions might be grown in every space between the Strawberries, or two rows of Tripolis may be planted. Lettuces, Spinach, Kidney Beans, or Turnips may also be grown among either summer or spring-planted Strawberries, provided the latter are not overgrown in any way.

MULCHING AND MANURING STRAWBERRIES.—An early mulching of fresh and not very strawy manure ought always to be given established Strawberry plants. When applied before hot and dry weather sets in much of the fertilising portion of the manure is washed down to the roots, and the mulching further serves to keep the ground cool and moist, which it is almost needless to add are important factors in the perfecting of good crops. In many instances, or where the ground is partially exhausted, a surfacing of either guano, bonemeal, or some kind of advertised artificial manure, and failing either of these, soot, ought, prior to mulching, to be given and well stirred in with a flat hoe. A large quantity is not needed, a sprinkling only of the strong manures being given, but the ground may well be coated over with soot. Now is also a good time to commence applying liquid manure or sewage, this only being of real benefit to the plants while the ground is in a moist state. Growers for market manure and mulch early, strawy manure being used for the latter purpose, the surface of this eventually becoming washed clean enough for the fruit to rest upon; but in most private places a fresh surfacing may well be given later on, or before the fruits are far advanced in growth.

THINNING FRUIT BUDS.—Where the birds have not had too much of their own way there is abundance of bloom on nearly all the fruit trees. It does not follow, however, that extra heavy crops of fruit will set; but on the contrary, it is no unusual occurrence to see the promise of a heavy crop unfulfilled. A tree may be literally smothered with bloom, and yet no crop worthy of the name be obtained, this being in many cases simply the result of exhaustion. All the tree's energies are wasted on the development of the flowers. The strain put upon the trees during the process of forming pollen is too much for them, and they are unprepared to meet the still severer task of perfecting seeds. A timely thinning out of the fruit buds in many cases is absolutely necessary. Nothing is gained by leaving all to open, as the frosts usually destroy all the best flowers or none. Pears are especially floriferous this season, and in numerous instances at least one half of the buds may be well removed at once. The Jargonelle rarely produces too many buds, but as these develope into large bunches of bloom, the latter may with advantage be freely thinned out, the central flower being invariably followed by the most perfect fruit. Williams' Bon Chrêtien, Marie Louise, Doyenné du Comice, Easter Beurré, Winter Nelis, and Glou Morçeau are especially in need of thinning out this season, there being three times more buds than are needed. Large bush Apple trees cannot well be thinned out, but miniatures or those on the dwarfing stock will pay for it. Cherries, Plums, Apricots, Peaches, and Nectarines all are too thickly covered with flowers, and the thinning out ought not to be delayed till the fruits commence swelling.

FRUIT FORCING.

PEACHES AND NECTARINES.—*Earliest Forced House.*—Alexander ripens from the middle of April in a house to which fire heat is applied at the commencement of December. It is large and rich in colour. Waterloo also ripens with it, is large, and of good colour, but unfortunately a clingstone. Early Beatrice follows, and is a good Peach, and Early Louise and Early Rivers are liable to crack at the stone, which may be mitigated by fertilisation with pollen from other varieties. Early Rivers is a large pale fruit, and particularly rich in flavour. Hale's Early, Early Alfred, and Early York will form the connecting link between the very early varieties and such standard varieties as Royal George (Stirling Castle is a very fine form of Royal George), Grosse Mignonne, &c., which are several weeks later in ripening, there being six weeks between Alexander and Royal George. Hunt's Tawny and Lord Napier Nectarines form an admirable prelude to Elruge and Violette Hâtive, and a good succession may be secured in one house, the only change in the treatment being in not syringing such as have commenced ripening. Trees on which the fruit is ripening must have the foliage and fruit kept dry, but the border must not be allowed to become very dry, or it will act injuriously upon the growth and affect the maturity of the buds for future bearing. As the fruit of the other varieties will not be ripe for some time yet, the atmosphere must be kept moist by frequently sprinkling during the day, syringing the trees in the morning, and again when closing the house. The night temperature will be perfectly safe at 65° to 70°, but 5° less, though it will retard the ripening, will not tax the energies of the trees so much as the higher temperatures. Leaving the ventilators slightly open constantly at the upper part of the house will be an advantage. In the daytime 70° to 75° by artificial means, and 10° to 15° more with sun heat, will be suitable temperatures.

Trees Stoning.—Do not hurry trees undergoing this process, 60° to 65° at night is ample, and 70° to 75° by day, avoiding high night temperatures and sudden fluctuations by carefully attending to ventilation. A little air left on at night will prevent the deposition of moisture on the foliage through the night to any serious extent, and enlarge the openings when the sun acts on the house, yet without lowering the temperature, which should advance with the increased power of the sun and a corresponding increase of ventilation. Avoid, if possible, fumigating. It dries the atmosphere and not unfrequently cripples the foliage, when the fruit may from the check be seriously imperilled and fall. Early closing is an advantage, but it must not be done to the extent of undue excitement, nor continued until late, the temperature being allowed to fall with the declining sun. It is also advisable to allow a little extra latitude to the growth, but on no account allow foliage to be developed that must afterwards be removed in quantity.

Trees Swelling their Fruits.—There are two distinct periods during which the fruit swells most freely—viz., after setting until the commencement of the stoning process, and after stoning. The first is materially accelerated by a genial condition of the atmosphere, and the means employed to secure a good root action, which is best effected by a judicious and gradual regulation of the growth by the process of disbudding and in thinning the fruits. Overcrowding is a great evil, but large reductions of growth at one time, as well as of fruit, are not good. There is no safety save in a steady progress and careful disbudding. The more vigorous the tree the greater is the danger of the fruit being cast in stoning, and the evil is afterwards accelerated by severe disbudding. In the last swelling after stoning the shoots should be well tied down, so that the fruit may have the benefit of all the light possible, but a moderate extension of growth will materially assist the fruit in swelling, care being taken that the principal foliage and fruit be not interfered with. Supply water thoroughly to inside borders when necessary, and weakly trees should receive liquid manure.

FIGS.—*Earliest Forced Trees in Pots.*—The fruit will now be ripe or nearly so, hence the supply of water at the roots must be diminished, syringing being discontinued, and a free circulation of warm air air afforded, leaving the top ventilators open a little at night. Although watering is advised to be lessened during the ripening of the fruit the soil must be kept moist, and a moderate moisture in the atmosphere secured by an occasional damping of available surface, but this will only be necessary in very bright weather. As soon as the first crop is gathered syringe the trees twice daily, renewing the top-dressing, and watering at the roots with weak liquid manure. If the second crop of fruit be very abundant they must be thinned out, so as not to overtax the trees for early forcing next season.

Early-forced Planted-out Trees.—The fruit will soon commence ripening, when the border must be examined, and if necessary given a thorough supply of water or liquid manure. Cease syringing the trees when the fruit commences ripening, avoiding a superabundance of moisture about the house, having a little ventilation at the top of the house constantly, and a free circulation until the fruit is all gathered. Do not gather the fruit until it is thoroughly ripe unless it has to be packed.

Succession Houses.—Frequent attention must be given to stopping the shoots at the fifth joint, and subsequently to one or two, but too many side shoots must not be encouraged, as the fruit and wood require light and air for its maturation. Train extensions in their full length, thinning or removing strong growths so as to admit light and air to the

fruit. Attend daily to syringing the trees, and supply water as necessary to maintain thorough moisture at the roots. Renew the mulching if necessary, and keep it moist so as to encourage the roots to and keep them at the surface.

CHERRY HOUSE.—When the stoning is complete the fruit will commence colouring. The temperature must not exceed 65° by artificial means, and 55° to 60° at night, with a little ventilation, increasing it at 70°, and not allowing the heat to rise above 75° without full ventilation, closing at 70°, subject to the leaving of a little air on constantly at the top of the house. From the commencement of colouring until the trees are cleared of the fruit syringing must cease, or the fruit will crack, but a good moisture should be maintained in the house by keeping the surface of the border moist, or if the trees are in pots damping the floors, &c., two or three times a day, avoiding, however, a stagnant atmosphere. Aphides must be kept under by fumigation, their presence for any length of time disfigures the fruit. See that the borders do not want water, and liquid manure should be liberally applied to trees in pots.

PLANT HOUSES.

Stephanotis floribunda.—If a mass of bloom is required, it is a mistake to grow this plant too warm. In a close moist atmosphere the shoots extend rapidly, but are the reverse of short-jointed, and often fail to flower from every joint. If grown from the present time in a night temperature of 60°, with a rise of 10° by day, with a good circulation of air and the shoots fully exposed to the sun, the wood will be firm, short-jointed, and the plant in due time will be covered with flowers. Train the shoots carefully under the roof to thin cords. If tied to the trellis amongst the old wood and foliage they are too shaded to flower profusely from every joint. Where this system cannot be practised and the growths must be trained amongst the old wood on the trellis, they should be pinched rather than allow them to crowd one another after they have shown a good number of blooms. The flowers by this system come forward more rapidly than is the case if the shoots are allowed to extend; it also gives the growths in a backward state a chance to extend.

Bougainvillea glabra.—Do not tie down the shoots of this plant, but allow them every liberty until their bracts are fairly developed. When they reach this stage they can be evenly disposed over the trellis and fully expanded under cooler and more airy conditions, which result in the flowers possessing more colour and substance. Grow this plant in its various stages fully exposed to the sun. Air must also be admitted whenever the weather is favourable. Plants that are full of roots may be fed with weak stimulants every time water is needed.

Clerodendron Balfourianum.—Transfer young plants into 6-inch pots that were rooted early in the year, and which are now well established in 3 and 4-inch pots. After potting stand them where the shoots can be trained under the roof of a plant stove. They must be fully exposed to the sun, and by autumn they will have ripened shoots fully 10 or 12 feet in length. When the 6-inch pots are full of roots feed liberally, so that the young plants will attain as great a strength as possible. Plants that were grown in this way last year and trained round fine stakes inserted near the sides of the pots will now be breaking freely into growth. Bring them forward in an intermediate temperature, so that by the time they come into flower they will be sufficiently hardy to bear the temperature of the conservatory without injury. Well grown plants treated as described will be masses of bloom, and they prove strikingly effective for conservatory decoration in early summer. After the plants have flowered they can be thrown away, unless it is deemed prudent to grow on a portion into a larger size. But when plants are raised annually there is no necessity to retain two-year-old plants.

Clerodendron fallax.—Seedlings that are large enough for potting may be placed in 3-inch pots. Sow seed to provide plants for flowering in 5 and 6-inch pots during November and December. The bright scarlet flowers of these plants are most useful during these months, and render the stove or intermediate structures very attractive. It is a mistake to raise the plants required for this purpose too early, for they cannot well be retarded, and if the centre is removed with the object of delaying the flowering season for a time the heads of bloom produced are small. If too early, however, pinch them at once, and if strongly developed each shoot will produce a good head of bloom. Some of the earliest plants are very useful for supplying the necessary seed for another year.

Clerodendron fragrans.—Where this sweet-scented variety is appreciated either in a cut state or in small pots for various forms of decoration cuttings should be inserted at once. To maintain a good supply cuttings may be inserted at intervals of a month, singly, in 3-inch pots, a good size in which to flower them. If this variety is given too much root room it will grow rapidly and strongly, but fail to flower. If confined in the pots advised every plant will produce good heads of bloom, and will vary from 6 to 9 inches in height. For cutting only a few may be grown on, which will flower freely enough after the pots become crowded with roots. Cuttings strike freely in the propagating frame, and do well in a compost of loam, sand, and one-seventh of manure.

Achimenes.—Good cuttings will now be plentiful, and more plants may be raised by inserting shoots in light sandy soil in 5-inch pots. They will root freely enough under the shade of Cucumbers and Melons, provided too much water is not allowed to fall upon them. The earliest will be better in an intermediate than in a stove temperature. They do not run up so quickly, and will by the time they are in full bloom be ready for the conservatory. If a few are wanted for the stove, allow them to advance in moderate heat. Baskets that have been made up by the insertion of tubers after they were started, are improved by having the whole of the tops taken off; these will do for insertion in pots. This treatment induces the plants to start freely from the base, and four or five strong flowering shoots in the place of one is the result. These plants must not be syringed, and the bright rays of the sun should be shaded from them.

Lily of the Valley.—Plants that are intended to flower during November and have been grown since they flowered in a temperature of 50° to 55° may be placed at once in a cold frame in a sunny position. Harden them gradually and water them liberally. They should be protected in frames until the second week of May, when they may be plunged outside.

THE BEE-KEEPER.

BEES IN APRIL.

THE month of "sunshine and showers" has come in and brought with it a pleasant change. Balmy breezes and gentle rain with now and then a gleam of the daily growing more powerful sun are causing Nature to wake once more from slumber and to bud forth with pleasing variety of life verdure and flowers. An early opportunity was taken in most apiaries—if attention has been paid to the teaching often inculcated and sometimes followed—of examining every stock. We ventured to prognosticate that the past winter had been on the whole conservative of bee life, and this appears to have been the case, for on examining our stocks to-day we found that all were alive, and that the food consumption had, as far as it was possible to judge, been less than usual, this being due, no doubt, to the length of the winter and the small amount of brood hitherto reared.

The first stock examined had passed through the winter packed in the following manner. Immediately after the completion of extracting last summer an upper tier of frames was placed upon the body hive for the bees to clean out preparatory to storing them in readiness for the then future spring. Owing, however, to a press of work these empty frames were never removed, but a piece of ticking and three thicknesses of carpet were placed upon the top; the outer case was then put over all, and so it stood, except that a considerable amount of covering was added about six weeks ago, until to-day, when this upper tier was removed and the state of the stock was thoroughly examined. The honey in the body hive is liquid and far from being exhausted, while the bees are numerous, bright, and active, working eagerly in the adjacent Willow beds at every suitable time.

The second stock was treated in a different way, and ought to have died out long ago and all the honey left have granulated, if the teaching of a certain school of bee-keeping must be accepted. This hive consisted of thirteen frames, each comb containing some honey, and the six outside ones being completely filled. The bees were never very numerous, but came from a strain which have been remarkably strong workers, and have shown other desirable traits of character. On opening the stock and removing the outside combs we found that the honey was liquid and in grand condition, and on examining further the bees were found to be in good condition, and with every probability of working into a strong stock in a short time. And yet they ought to have died, being in a roomy hive and with slabs of ice-like honeycomb on either side, but they lived; indeed the loss of life has been small, the consumption of honey very little, and the condition of the honey in the outside frames excellent. Could they have passed through the ordeal better had the hive been reduced to a few frames only? Would they have wintered as well? The top covering was again ticking and carpet.

A large skep, managed entirely on the warm system, being well packed both at the top and sides, is doing well, but has certainly shown an inclination to fly at times when the other stocks have been quiet and content to stay at home and wait. A stock covered with American enamel cloth has—although we hardly expected

that it would be so—prospered, and is certainly in a forward condition. It is scarcely necessary to enter into further detail, because, as far as it is possible to judge, stocks properly cared for in autumn and well supplied with food seem, notwithstanding considerable variety of conditions, to pass safely through an English winter, provided that the bees are numerous. No queens have yet given out, nor do we expect any mishap, although it is too soon to say that we are "out of the wood." This thorough examination having been made, the presence of a fertile queen, a sufficiency of food—without too many cells being occupied with honey and pollen—and an addition having been made to the covering in all cases; what, it may be asked, will be done next? Nothing in particular, we reply, except to watch and gradually enlarge every hive until the honey season begins, when supering arrangements will at once have attention. If any stock seems to be making small progress a few cells of honey may occasionally be uncapped, and possibly a frame or two of brood may later on be taken from one stock and added to another. If it is necessary to hurry on the bees and to arrive at the supering point earlier than would be the case if this let-well-alone policy were strictly carried out dribblets of syrup will be administered daily, but—not if it can be avoided.

Those who, in these first delicious days of the year fast growing to maturity have smelt the sweet smell of a strong stock, have had a joy for ever. Their enthusiasm is once more aroused—not the fever-like enthusiasm of a novice taking up a new hobby, but the deep-lying love for his bees which every true bee-keeper must experience. Our friendly readers will pardon perhaps this slight digression from the more practical side, but occasionally the feeling of intense love for bees and Nature wells up in irresistible force and cannot be stayed by the comparatively dry barriers of endeavouring to write for the instruction of others and for self-improvement.

In many apiaries there is now a great deal of "business" being done, hives being constantly opened and various manipulations being continually undertaken. If the bee-keeper will use a few grains of common sense he can hardly fail to see that every work done in the apiary must either be useful or harmful; we may tell him that a young bee-keeper generally does about ten times more work for every stock than is either useful, necessary, or profitable. Above all we must guard the novice, and—tell it not in Gath—a few of the older members of the craft, that "procrastination" is fatal. If work must be done let it be done at once, and well done; if work is not necessary it is neither useful or profitable; and if it is neither useful or profitable, only an amateur with nothing better to do, or a practical bee-keeper who desires to experiment, will undertake it.—FELIX.

INTRODUCING VIRGIN QUEENS.

SEVERAL times I have stated that I could introduce these without risk of failure, and I have also promised in these pages to tell how I do it; therefore I propose in this article to redeem that promise, and make this problem, which has been the greatest trouble to bee-keepers for more than a generation, clear and certain.

Like the introduction of fertile queens, there has been a little truth and a little error always mixed, and there have been so many assertions and counter assertions, that I had to trace the matter carefully, a work extending over several years, and which I did not finish till last season, so difficult and intricate was it, and yet now it is done there is nothing new in it; in fact the only thing I can claim as "new" is the determination of the causes of failure and success, and placing the matter on a scientific basis.

All people who have done any queen-rearing know that queenless bees will readily accept a virgin queen that has just hatched and has not mixed with any other bees, while if she has they never can succeed to enthrone one. Most assert that the queen is killed. Mr. J. E. Pond, jun., says the reception of queens is consequent on their behaviour. If they make themselves at home they are accepted; if they are alarmed then they are balled. In effect he is correct in this surmise, as if a stock of bees is selected that has long been queenless, with no means of rearing a new mother, and a virgin queen several days old be dropped in during the daytime, the entrance being carefully watched, she will quickly be seen to run out in the greatest alarm. I am not aware that anyone has ever previously noted this fact. Now take this queen and drop her amongst queenless bees that have the means of rearing a successor, and she will remain in the hive, but on opening it she will be found firmly balled. Here we see in the first case the bees were willing to accept her, but she was too frightened to stay; in the second her behaviour insured her being balled. That such was the case may be proved by presenting to the same bees a queen just hatched, which will at once be accepted.

To understand this we must remember what Mr. Bonner Chambers tells us to do—viz., consider what is the habit or custom of bees and queens in a state of Nature. By reflecting a little we shall see that when a queen hatches it is her habit to make herself at home with the bees she emerges amongst; and after having done so it is not the habit of any virgin queen to voluntarily go to another hive, nor is it the custom of a stock of bees to be visited by such a queen. Then, again, it is the invariable custom of just-hatched virgin queens as soon as they eat a little honey—which they always have to get themselves from some cell—to run over the combs in search of other queen cells, all of which they ruthlessly destroy. A fertilised queen, on the other hand be it noted, does not destroy queen cells until the enclosed larvæ has been transformed to nymphs, nor does she have occasion to get food herself; thus the natures of the two classes of queens are different.

Let us now consider (since queens never change their hives until they have mated) what takes place in a hive that has lost its queen—say from swarming or death. If from swarming, then sealed queen cells, brood of all ages, and eggs are left, and before these are too old to be developed into queens a virgin queen hatches out and introduces herself to the bees with the greatest assurance; and if the stock is too weak to throw a second swarm she at once destroys all the other royal cells, whether sealed or not. A similar course also takes place where the reigning queen is lost by death. Therefore, the natural course is for bees to be requeened by unmated queens only; but mark well, it is not natural under any circumstances for such queens to be alarmed or timid when for the first time they are mixing with them.

We have seen that in the experiments, conducted both by myself and Mr. Bonner-Chambers on the Pond's queen-introduction system misnamed Simmins', that the new queen was always safe and unmolested on the third day, solely because she conducted herself in a natural manner, and queen cells were formed, which she made no attempt to destroy. I thought if I introduced virgin queens several days old instead, all cells that were started, or attempted, would be destroyed at once, and the queen being of a natural kind would be well received. However, when I tried it, removing the laying queens in the afternoon and dropping the others in at night, I always failed. At this point I thought of what Huber says—viz., that bees will not accept a strange queen until an interregnum of twenty-four hours has elapsed. This observer, though wonderfully correct in many things, implies that after this time they will accept any strange queen offered to them. This, we all know, is not so, and therefore he is unjustly discredited in other matters. I now began experimenting again. I allowed at least twenty-four hours between the removal of the old queen, and sometimes as much as seven days, and in no case was there ever a failure. The virgin queens experimented with were all several days old—all know they are accepted if just hatched, and all were dropped in at the night time.

Let us consider the natural conditions in this procedure. The bees are queenless; they are aware of the fact, and are beginning to set about rearing a successor, or have already done so. When a virgin queen is found running over the combs she destroys every cell, and they accept her because it is their natural habit to do so under like circumstances. The queen on her part shows no alarm, as it is not their habit to do so in the night time, not having under any circumstances any fear of entering a wrong hive during dark or risk of meeting an intruder, so that by morning both bees and queen are mutually accepted.

At the fore part of this article I say that when virgin queens several days old are dropped in old queenless bees in the daytime they at once rush out in the greatest alarm. Is this instinct not a most wise provision of Nature to guard against such queens entering wrong hives? We know at the time of mating the queens leave their hives several times—often very many times—and as the hives they belong to have no means of raising a successor it is very unlikely that Nature, which provides for every emergency, should leave it possible for a virgin queen to be killed through entering the wrong hive. True, they are also endowed with good eyesight and memories, but having accidentally got to the entrance of the wrong hive another sense comes to their aid, and in a moment they take alarm and fly away in search of their own hives; thus nothing is left to chance.

Having explained the matter I will now briefly sum up the conditions necessary to successfully enthroning any virgin queen. First the hive must have been queenless twenty-four hours, not for more than seven days unless the bees are without the means of raising a successor, in which case there is no limit. Secondly, the queen must be dropped in alone after dark from the top of the hive, unless she has only just hatched and not been amongst any bees, when the daytime will do. Thirdly, no introducing cage of any description must be used on any account. The value of the knowledge here imparted may be somewhat conceived when we consider what a multitude of virgin queens are yearly destroyed all because it has been considered impossible to enthrone them after they had travelled a short distance. Last summer I sent them by post to the farthest parts of the country often without any previous notice to the recipients, and they were successfully enthroned by following the short instructions I sent with them. Then, again, supposing a person is queen-breeding, and he wants all his neighbours to only fly one particular kind of drone. All he has to do, after getting permission, is to leave as many postcards addressed with the owners as there are stocks, to be notified the day they swarm, and any night during the week take the required number of virgin queens and drop them in. Stocks treated so forty-eight hours after they swarm will rarely cast, and the swarms having all been "taken up" in the fall the old stock hives the following season will be producing only the desired drones. After they swarm other virgin queens should again be dropped in as before, and these will probably be mated to the desired drones, thus the stock hives are likely to be all of pure race. Having made the question so plain and simple nothing remains now but for virgin queens to take their place along with fertile ones in the trade, and as I pointed out in this Journal for March 8th, page 206, they can be bred, sold carriage paid, with safe delivery and introduction guaranteed by odd ones, at 2s. 6d. each, and yet yield a good profit to the breeder, and I hope to see it done in the coming season.

In the issue just named (page 206, last paragraph) read "new non-swarming system" for "new swarming system."—A HALLAMSHIRE BEE-KEEPER.

TRADE CATALOGUE RECEIVED.

William Bull, Chelsea.—*Illustrated Catalogue of New and Rare Plants.*

TO CORRESPONDENTS

*** All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Caterpillars (*J. W.*).—We have received the specimens, which shall be carefully examined, and information thereon published in an early issue of this Journal.

Early Scented Tulips (*J. B.*).—The varieties that are most scented are the Duc van Thols, particularly the golden-yellow variety. Others have more or less an agreeable odour, but none are so pronounced in that respect as to be worth mention on that account.

Large Cineraria (*Robt. Owen*).—We can only briefly allude to samples and letters that arrive as we are preparing for press. The bloom is very fine, 3¾ inches in diameter, and the florets five-eighths of an inch across. It is one of the largest that has come under our notice.

Double Cinerarias (*J. K. G.*).—The variety is one of the double Cinerarias, of which there are several in cultivation much better in colour, and with larger blooms. It is, however, worthy of preservation, and will perhaps improve as it becomes stronger.

Kidney Beans (*L. B., Ely*).—The seeds sent are those of the white Harieot Bean, which may be sown and treated the same as Scarlet Runners, early in May being soon enough for sowing. The dried beans are much used in cookery, and enjoyed by many persons. Their consumption is increasing in this country.

Marechal Niel Rose (*L. H.*).—We have received the unsatisfactory samples of decaying buds. It is a case of debility, notwithstanding the application of fertilisers, as we will explain more fully another week. At the present moment time and space are too limited for making the matter clear, and suggesting a method for reinvigorating the trees.

Stacking Loam (*T. K.*).—It may be stacked in any convenient place out of doors, but not under or very near trees, or their roots would take possession of it and deprive the soil of much of its fertility. It is well to form the heap into a ridge to prevent its being saturated with rain in the winter.

Cropping Apricot Tree (*J. E. F.*).—The number of fruits to leave can only be determined by the condition of the tree. If strong and vigorous, a tree of the size of yours would perfect ten dozen fruits—possibly more with the aid of liquid manure and mulching over the roots to induce the free production of feeding roots near the surface. If the tree is only of moderate strength the crop would be excessive.

Berberis Hedge (*M. C. B.*).—The Berberis would be the better cut down to a foot or 18 inches, and the earlier the better, so as to secure a good growth. It would be an advantage to apply a dressing of leaf soil or decayed manure either as a mulch on both sides or pointing in, but without injuring the roots. If there be any weeds carefully remove them before applying the manurial matter. Go over it with the shears early in August for the removal of irregularities of growth.

Teddington Garden (*Kilternan*).—Mr. R. D. Blackmore has obliged us with the following particulars—"The soil of my garden is a fairly strong loam, yellowish, and very binding in dry weather, but containing sand. The depth of loam is nowhere less than 3 feet, and more generally 4 feet to 4 feet 6 inches deep. Under this we have a greyish yellow gravel, tending to large flints in the lower stratum, and about 6 feet in depth. Then we come to grey sand, and the water level at 10 to 12 feet from the surface. The well known De Jonghe of Brussels wrote that he had been struck with the fitness of this soil for Pears more than thirty years ago."

East Lothian Stock (*W. S. S.*).—To have East Lothian Stocks flower in early spring it is absolutely necessary that the plants are strong and at the point of showing flower in the end of October, so that under greenhouse treatment in winter the flowers will be ready to open in February and March. In order to accomplish this do not delay much longer before sowing. Prick out the seedlings at a very early stage, and grow on rapidly in open fairly rich soil, repotting as needed until pots 8 to 10 inches in diameter have been used. Never allow dryness at the roots even during winter. The new crimson white and purple are the best varieties.

Auriculas (*Young Reader*).—Soil composed of two parts or a little more of yellowish turfy loam of medium texture, that is neither very sandy nor very clayey, one part of cowdung dried and crumbled, one of leaf mould, and one part in equal portions of wood ashes, powdered lime rubbish and sand, will grow the plants well if they receive in other respects good attention. Avoid overpotting and overwatering immediately afterwards. They like shade in summer. We consider a frame preferable to a room window for wintering the plants. The same remarks apply to Polyanthuses. It is contrary to our established rule to answer the other part of your question, for a reason that you ought to understand after a little reflection.

Red Lead and Pheasants (*R. G. F.*).—Red lead is injurious, in fact poisonous to pheasants if they partake of it, but we have not known a single instance of such occurring, though we have red-leaded Peas, Beans, and seeds liable to be taken by birds for many years, yet the birds (and we have counted over twenty pheasants in the garden at one time) never interfered with the seeds that had been red-leaded before sowing, whilst those not so treated were taken to the destruction of the crop. Sprinkling red lead on Peas after sowing is not likely to save them from being taken by pheasants or mice, and the birds or animals taking Peas so treated are very unlikely to be injured, as they will take the Peas without the lead.

Fungus in Mushroom Bed (*P. D.*).—We fear it is not practicable to apply anything to the bed strong enough to destroy the fungus that infests it without destroying or seriously injuring the Mushroom spawn also. The manure must have contained spores of the invader, and possibly was not sufficiently heated during fermentation before making the bed. You might try experimentally a solution of salt at the strength of 2 ozs. and upwards to the gallon of water. Twice that quantity of salt has been used, but we advise you to proceed cautiously and note the effects on a portion of the bed before giving a general application. Perhaps some of the larger clumps of the noxious fungus could be dug out, and if it "runs" close to the surface of the bed this could be removed, afterwards casing with a mixture of loam and fresh cow manure.

Economical Boilers (*J. R. G.*).—We cannot say, nor can anyone else, which is the "best" boiler. Possibly there is not a "best" for all houses and positions, while very much depends on fuel and management. For heating with coke alone up to 1000 feet of piping coil boilers are good, as are tubulars, which heat, according to size, any extent of piping. Where coal of a caking nature is used one of the many improved forms of the saddle boiler, in which all the heat from the fuel can be exhausted

by having to traverse the various parts of the boiler before it reaches the chimney, is suitable. In these boilers either coal or coke can be consumed, or a mixture of both; for instance, slack and gas coke constitute a good fuel. In the selection of a boiler we should advise you not to have one that is worked, or must be set, with outer flues of brick, but one so that all the heat would be enclosed within the boiler.

Hyacinth Stems Dislocated (*Col. Urquhart*).—Your Hyacinths and letter were placed before the Scientific Committee of the Royal Horticultural Society, and the following is their report thereon;—"Specimens of this not uncommon phenomenon were sent from Colonel Urquhart of Rosebay, Broughty Ferry, for information as to the cause. The spikes have the appearance of being pinched off when just emerging from the bulb. The cause is apparently twofold. On the one hand the bud-scales at the top are too rigid, while on the other the spike was well nourished, the result being that the insufficient expansion of the scales checked the development of the spike at the place where it becomes decapitated. The probable explanation was the excessively fine season of 1887, the 'ripening off' bringing about the rigidity of the bulb-scales, at the same time favouring the formation of the spike within. Mr. Burbidge observed that it is a noticeable fact that the Japanese gash their bulbs with three slits at the top, to allow of the free escape of the spike, and to prevent such constrictions."

Wet Tennis Lawn (*W. B.*).—The half of the lawn which is so wet and unsatisfactory is obviously the result of bad workmanship. In levelling, some of the clay should have been taken out and a layer of porous soil added equal in thickness to that under the other half of the turf that is good. Drains in such a case are of small service, as the surface water cannot pass through the clay above them. Where drains are operative it is mainly by subsoil water rising upwards, then passing away through them, the level of the pipes being what is termed the water table, which but for them would be higher and the land might be swamped. Water does not pass downwards and directly into drains, but to the water table, hence pipes a foot below the surface may be "dry," while others 2 or 3 feet below them may "run" freely. The turf should be taken off, some of the clay removed, a thick layer of soil and ashes spread on, firmed, and the turf relaid. Until that is done the bad half of the lawn cannot be made equal to the other. Those who made the lawn were either ignorant or negligent, and you are a sufferer by their imperfect work.

Gros Maroc Vine Bunches Shrivelling (*S. N.*).—It is a consequence of the immaturity of the buds, which may be due to the extreme vigour of the Vine and the overcrowding of the growths, the principal foliage not having had full exposure to light. The shoots, or those parts of them that are to be relied upon for fruiting in the ensuing season, should in the current year have plenty of space for the foliage, so that the buds at the base of the leaves may be perfectly formed through the complete assimilation of the sap, the growth being thoroughly solidified as made, and nutrient matter stored in the buds and adjacent wood, on which depends not only the formation of the buds but their perfect development into fruitful shoots the following season. The laterals on those parts should be kept well in hand, either removed altogether or pinched at the first leaf, no further growth beyond a joint being allowed without stopping, and not these if the laterals interfere with the exposure of the main leaves to light and air. Sometimes the basal buds in vigorous Vines do not afford fruit, whilst an increase of length in pruning results in a satisfactory crop, which we think would meet your case—viz., do not prune so closely, thereby securing more fully developed buds on wood with more stored up sap. This Grape is not only more fruitful, but the fruit is finer and of better quality grafted on the Black Hamburgh than on its own roots, and this applies to all the thick-skinned varieties.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*G. P.*).—We do not undertake to name varieties of Azalcas. These are now so numerous that they can only be determined by comparison with a large collection. (*C. Z.*).—They are probably varieties of Narcissus pseudo-Narcissus. (*Japonica*).—Dendrobium eburneum. (*G. R. J.*).—The plant is Hippuris vulgaris, commonly called the Mare's-tail, to distinguish it from the Equisetums, which are termed Horsetails. (*H. M.*).—1, Stenocarpus Cunninghami; 2, Anopterus glandulosa; 3, Andromeda angustifolia. (*W. G. H.*).—Spiræa confusa. (*C. H.*).—1, Polygala Chamæbuxus; 2. Andromeda angustifolia; 3, Scilla campanulata alba; 4, Corydalis tuberosa. We cannot undertake to name varieties of Daffodils. Both yours are forms of Narcissus pseudo-Narcissus. (*H. O.*).—A fine pale variety of Crinum ornatum.

COVENT GARDEN MARKET.—April 25th.

PRICES continue about the same as last week.

FRUIT.

	s.	d.		s.	d.
Apples, ½ sieve	2	6	to	4	6
Nova Scotia and Canada barrel	10	0		18	0
Cobs, 100 lbs.	45	0		0	0
Grapes, per lb.	3	6		6	0
Lemons, case	10	0		15	0
Oranges, per 100	2	0	to	5	0
Pears, dozen	3	0		6	0
Pine Apples, English, per lb.	0	0		0	0
St. Michael Pines, each	3	0		5	0
Strawberries, per lb.	4	0		8	0

VEGETABLES.

	s.	d.		s.	d.
Artichokes, dozen	1	0	to	2	0
Asparagus, bundle	8	0		0	0
Beans, Kidney, per lb.	1	6		0	0
Beet, Red, dozen	1	0		2	0
Broccoli, bundle	0	0		0	0
Brussels Sprouts, ½ sieve	3	6		4	0
Cabbage, dozen	1	6		0	0
Capsicums, per 100	1	6		2	0
Carrots, bunch	0	4		0	0
Cauliflowers, dozen	3	0		4	0
Celery, bundle	1	6		2	0
Coleworts, doz. bunches	2	0		4	0
Cucumbers, each	0	4		0	7
Endive, dozen	1	0		2	0
Herbs, bunch	0	2		0	0
Leeks, bunch	0	3		0	4
Lettuce, dozen	0	9	to	1	3
Mushrooms, punnet	0	6		1	0
Mustard and Cress, punt.	0	2		0	0
Onions, bunch	0	3		0	0
Parsley, dozen bunches	2	0		3	0
Parsnips, dozen	1	0		0	0
Potatoes, per cwt.	4	0		5	0
,, Kidney, per cwt.	4	0		0	0
Rhubarb, bundle	0	2		0	0
Salsafy, bundle	1	0		1	6
Scorzonera, bundle	1	6		0	0
Seakale, basket	1	3		1	9
Shallots, per lb.	0	3		0	0
Spinach, bushel	1	6		2	0
Tomatoes, per lb.	1	0		1	6
Turnips, bunch	0	4		0	6

PLANTS IN POTS.

	s.	d.		s.	d.
Aralia Sieboldi, dozen	6	0	to	12	0
Arbor vitæ (golden) dozen	12	0		24	0
Arum Lilies, dozen	6	0		12	0
Azalea, dozen	18	0		36	0
Cineraria, dozen	6	0		10	0
Cyclamen, dozen	12	0		24	0
Dielytra, per dozen	12	0		18	0
Deutzia, per dozen	6	0		9	0
Dracæna terminalis, doz.	30	0		60	0
,, viridis, dozen	12	0		24	0
Erica, various, dozen	9	0		18	0
,, ventricosa	18	0		24	0
Euonymus, in var., dozen	6	0		18	0
Evergreens, in var., dozen	6	0		24	0
Ferns, in variety, dozen	4	0		18	0
Ficus elastica, each	1	6		7	0
Foliage Plants, var., each	2	0		10	0
Fuchsia, dozen	6	0	to	12	0
Genista, per dozen	6	0		12	0
Hyacinths, dozen	5	0		10	0
Hydrangea, dozen	9	0		18	0
Lilies Valley, dozen	18	0		24	0
Lilium doz.	24	0		36	0
Marguerite Daisy, dozen	9	0		12	0
Myrtles, dozen	6	0		12	0
Narciss, per dozen	8	0		10	0
Palms, in var., each	2	6		21	0
Pelargoniums, dozen	12	0		18	0
,, scarlet, doz.	4	0		9	0
Poinsettia, dozen	0	0		0	0
Solanum, dozen	0	9		0	0
Spiræa japonica, doz.	9	0		15	0
Tulips, dozen pots	0	0		0	0

CUT FLOWERS.

	s.	d.		s.	d.
Abutilons, 12 bunches	3	0	to	6	0
Anemone (Fulgens), 2 bunches	3	0		6	0
Anemones (French), 12 bunches	1	6		4	0
Arum Lilies, 12 blooms	3	0		6	0
Azalea, 12 sprays	0	6		1	0
Bouvardias, bunch	0	6		1	0
Camellias, 12 blooms	1	0		3	0
Carnations, 12 blooms	1	0		3	0
Cyclamen, 12 blooms	0	6		1	0
Daffodils, Double, 12 bchs	2	0		4	0
,, Single, 12 bchs	1	0		3	0
Daisies, 12 bnuches	2	0		4	0
Epiphyllum, 12 blooms	0	4		0	6
Eucharis, dozen	3	0		6	0
Gardenias, 12 blooms	2	0		4	0
Hyacinths, French, 12 bnuches	1	0		2	0
Lapageria, coloured, 12 blooms	1	0		1	6
Lilium longiflorum, 12 blooms	4	0		6	0
Marguerites, 12 bnnches	2	0		6	0
Lily of the Valley, 12 sprays	0	6	to	1	0
Mignonette, 12 bnnches	3	0		6	0
Narciss, white (French) 12 bnnches	3	0		6	0
Narciss, various, 12 bchs	3	0		6	0
Pelargoniums, 12 trusses	1	0		1	6
,, scarlet, 12 trusses	0	6		0	9
Primroses, 12 bunches	0	9		1	6
,, (double), bnnch	0	9		1	6
Roses, Red, 12 blooms	2	0		6	0
,, (indoor), dozen	3	0		4	0
,, Tea, dozen	1	0		2	6
,, red, dozen (French)	1	6		3	0
,, yellow	2	0		3	0
Spiræa, bunch	0	6		1	0
Stephanotis, 12 sprays	6	0		9	0
Tropæolum, 12 bunches	2	0		3	0
Tuberoses, 12 blooms	1	0		2	0
Tulips, dozen blooms	0	6		1	0
Violets, 12 bnuches	0	6		1	0
,, (French), bunch	1	0		2	0
,, (Parme), bunch	2	0		3	0
White Lilac, per bunch	5	0		6	6



HELPS TO SUCCESS—FRUIT ON FARMS.

The practice of economy, in the full and most comprehensive sense of the term, which has arisen out of the agricultural depression, has not only enabled really earnest energetic men to curtail expenses, but it has in such able hands assumed an aspect altogether apart from mere saving, for it is brought to bear upon every cultural detail. Much more attention is now given to the growth of crops for which there is a particular demand within a moderate distance of the farm, and we are bound to admit that there is a growing desire for improvement among farmers generally. Only a few hours before sitting down to write this article we were asked by a farmer fast approaching the ordinary span of human life to tell him what in our opinion was the best manure for Mangolds. More than ordinary interest was excited by the question, for his land adjoins an artificial manure factory, and he had doubtless expended much money in years gone by upon special manure mixtures. Of course we were only too glad to do our best for him, and he seemed positively amazed at the simplicity of our formula. He owned to having wasted money upon the dealers' mixtures, about which he knew nothing, and expressed his anxiety to try and do better. It is in such applications that we find our reward for trying to show farmers that improvement in practice is possible.

Much has been said for, and much more against, fruit culture as an aid to success in farming, yet we have no doubt that under favourable conditions it is found to answer. But then common sense must be brought to bear upon the matter, for a man who rushes into fruit culture without practical knowledge of it, simply courts failure. Only under very exceptional circumstances should we ever advise a tenant farmer to plant fruit trees, but he might certainly venture upon the culture of bush fruit and Strawberries with much less risk of failure. But even in this he should feel his way, and only devote a moderate proportion of his holding to it at the outset. If he is to succeed he must grow only the best sorts in the best way, keeping to such standard sorts as Sir Joseph Paxton Strawberry, Prince of Wales Raspberry, Red Warrington Gooseberry, Black Naples and Raby Castle Currants. Then as to culture. Take, for example, the Strawberry. He ought to procure strong runners, and from nursery beds, of them in the autumn preceding the legitimate planting, at the rate of about 17,000 plants per acre. He cannot afford to waste a season, and if from such nursery beds he can procure strong plants for making his beds in rich soil early in the following July, he may feel sure of a fair crop of fine fruit next season.

In the recent issue of the Journal of the Bath and West of England Agricultural Society Mr. W. Weldon Symington, of Rockside, Okehampton, has an interesting paper on Fruit Farming. He says that in 1887 Strawberries when picked into punnets realised from £40 to £50 per ton, the average yield being 1½ ton per acre. Raspberries made 5d. per pound in punnets, and Black Currants 2d. per pound in hampers. Of Black Currants he says the fruit finds a ready sale in all our market towns, or can be sent to the jam manufacturers, who are always ready to take it. Of Raspberries he also says if the season is dry the crop should be picked into punnets, and these punnets packed into boxes for the nearest markets; but if the season is unsettled the jam makers will only too willingly take all the English-grown fruit at fair market prices, and send tubs with skin covers to hold the Raspberries when picked; and if harvested in this way they fetch about 3½d. per pound. There is, however, no waste, and at these prices the crop will be very remunerative. "If," he adds, "the market gardeners, who have to pay £10 to £14 per acre near towns, and proportionately high rates and wages, can make it pay, it is clear that an industrious thrifty working man, with ordinary intelligence and small capital, utilising the labour of his own children, and getting his holding at agricultural prices, cannot fail to make it pay. All my own experiments, even during the recent dry summer, have quite come up to my expectations." This advice we may explain is tendered for the special advantage of tenants of small holdings, but it may nevertheless be turned to account by others who are disposed to adopt such helps to success. Now, we have heard farmers declare they have tried everything that appeared likely to help them in their difficulties, and when fruit culture has had special mention we always feel tempted to inquire how they set about it, and whether the trial was a thorough one. It is all very well to indulge in a sneer at "jam," but to the farmer having a small holding especially we say, If the locality and soil are favourable you may do much worse than to turn some part of your holding to account for the culture of soft fruits, for which there is always a ready sale in one way or another.

(To be continued.)

WORK ON THE HOME FARM.

The sowing of spring corn is finished, and we shall watch the result with more than usual interest, for not only are we trying experiments with different kinds of manure, but we applied it in different ways. Some has been sown broadcast before the corn-sowing, some afterwards, and much has been drilled with the seed. We are inclined to give preference to the latter method; certainly it has the merit of expediency, and we believe it will prove best in other respects. Germination is so quick in the moist warm soil that the earliest sown Barley plant was quickly through the soil, and the rook boys have had to be on the alert early and late to protect the corn from their ravages. Five A.M. is none too early for the boys to be on duty, and they remain till sunset, for we will not allow the corn to suffer for lack of enough boys to scare the birds. In some instances we have to employ lads big enough for hand work, but under the modern views of education we cannot get boys as we used to do; yet we fail to see if a labourer's boy is well grounded in the three R's, why he should not then be let turn to the education which it is so important he should have in his life's calling. Depend upon it if the boy has more than ordinary intelligence he will make his way and find means to improve his education.

Wheat, to which a top-dressing of chemical manures was given a few weeks ago, already shows the beneficial effects of the fertilisers in its deep green hue and free strong growth, and the rolling of this and other winter corn has had to be done. Harrows have been used where winter weeds were numerous, and hand hoes are now in full swing among winter Beans and Peas. The preparation of the land for and the sowing of Mangolds is being pushed on as fast as possible. In connection with this work we have again had reason to deplore the gross carelessness of some farmers in the application of farmyard manure to the land for this purpose. It was carted and spread in the drills during the hard weather in February and left fully exposed to the air for five or six weeks. With such faulty practice before our eyes, can we refrain from comment upon the ignorance and carelessness of which it is an unmistakeable sign? By the time such "manure" was buried in the soil almost all the elements of fertility which it once contained had vanished in the air, and the residue would contribute very little to the development of a fine crop of roots. The lesson is a simple one not hard to learn, yet, if as appears, it is beyond the comprehension of the ordinary farmer, how can we hope that he will ever grapple with the science of manure application to his crops?

OUR LETTER BOX.

Learning Farming (*Inquirer*).—Your desire to acquire a knowledge of farming before you go out to Canada is certainly commendable, but we are unable to assist you in the way you suggest. It is possible you might obtain such a post as you require by means of advertisements. Are you aware of what sort of career is open to a young man of very limited means in the colonies? At the outset your work would be entirely that of an ordinary labourer; in due course you may save some money and acquire enough land for a farm, and be able to settle down upon it, feeling certain of a home, with sufficient means for all ordinary wants. Even this, however, is only to be achieved by dint of downright hard labour, combined with economy, perseverance, and sobriety. If you think you will eventually be content with such a career, well and good, but do not entertain any chimerical hopes of finding an Eldorado where you will "make your fortune." You are undoubtedly right about the difficulty which a clerk has in making his way in this country, but then much depends upon himself and the particular line he adopts. For a mere copying clerk there is little, if any, hope of advancement, but an intelligent clever young man, who begins in an office with possibilities of rising to a good post, we should certainly advise to persevere. The chief fault of young men at the bottom of the ladder is a lack of perseverance and staying power; they become impatient, and frequently throw up in disgust a post which might eventually lead to better things. How little perfection do we meet with, and yet we are certain that perfection in simple duties commands respect and confidence, and eventually leads to promotion. You will, we hope, understand that these remarks are to be taken in a general sense, and not as casting any reflection upon you. If you really dislike office duties and desire an active life in the open air, you will probably do well to follow the bent of your inclination if your expectations as an emigrant are reasonable and you are healthy and strong, for remember that in our colonies it is literally the strong right arm, combined with energy and intelligence, that enables a man to make his way to independence.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				
1888. April.	Barometer at 32° and Sea Level.	Hygrometer. Dry.	Hygrometer. Wet.	Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature. Max.	Shade Temperature. Min.	Radiation Temperature. In sun.	Radiation Temperature. On grass	Rain
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 15	29.800	52.4	48.5	N.E.	44.0	62.0	41.2	96.9	33.9	0.118
Monday..... 16	29.946	49.6	45.5	W.	45.0	60.4	42.2	104.5	35.2	0.090
Tuesday 17	29.750	48.3	47.1	S.	45.4	57.6	45.2	101.7	41.0	0.107
Wednesday.. 18	29.662	48.6	46.2	S.E.	45.8	58.1	45.3	102.8	40.9	0.656
Thursday.... 19	29.601	50.2	46.8	S.	45.3	53.7	41.1	92.1	34.1	0.602
Friday 20	29.578	45.2	43.9	W.	45.2	53.4	42.7	97.2	39.7	0.951
Saturday 21	29.722	46.3	43.6	S.W.	45.6	55.0	41.3	82.3	39.3	—
	29.723	48.7	45.9		45.2	57.2	42.7	96.8	37.8	1.604

REMARKS.

15th.—Lovely morning, cloudy afternoon, wet evening.
16th.—Bright and fine, but cloudy at times in the afternoon.
17th.—Morning generally dull and damp; afternoon frequently bright, but with one or two heavy showers.
18th.—Generally bright morning; heavy rain and hail storm at 0.30 P.M., and very wet till 5 P.M.; thunder and lightning at 2.30 P.M.; fair evening.
19th.—Very wet, with thunder at intervals, from 10.30 A.M. to 2 P.M.; otherwise showery.
20th.—Dull and showery till 11 A.M., then fair, with a good deal of sunshine in the afternoon; rain at night.
21st.—Fine, but without bright sunshine.

A wet week. Temperature 6° above that of the preceding week, and nearly 3° above the average.—G. J. SYMONS.

GLAZED FLOWER POTS.

CONSIDERABLE attention has lately been directed to glazed flower pots, and I am led to make a few remarks concerning them. After a long experience of these pots every additional year's practice and observation strengthen my favour for them, and I certainly would not now relish being compelled to grow a large and miscellaneous collection of plants in ordinary pots, and except those who have never had experience of glazed pots I have not met with a gardener who after a fair trial has not come to the same conclusion.

I had the pleasure recently of inspecting the extensive general collection of plants at Woodbank House, Dumfries, the residence of C. W. Scott, Esq., every plant of which is in glazed pots, and under the able management of Mr. James Cole, a member of a family in whom high art in plant culture seems hereditary. Mr. Scott, after seeing glazed pots at Drumlanrig four or five years since, at once ordered the disuse of common pots. Mr. Cole told me he should be very sorry to have to return to them, and that he considered a saving of labour in the houses at Woodbank to the extent of fully one man was effected by the use of glazed pots. He ridicules the idea of their having any injurious effects on plants, and points, as well he may, to the luxuriant condition of his Erica Marnockiana and other Heaths, his Azaleas, greenhouse Rhododendrons, &c. I should like to see any practical man look over his Odontoglossums, Cattleyas, Lælias, Crotons, or Nepenthes, and attempt to point out any injurious effects arising from the glazed pots in which the plants are luxuriating.

I have heard some very droll objections raised by gardeners to these pots, a very common one being "Do you not find these pots exclude the air from the roots?". I am not aware that roots are the better for any more air than is supplied to them by pressure on the surface of the soil or by the holes and drainage in the bottom of the pot, even if the surface could be entirely covered by the glazed ware. "Do you not find the soil keeps too long moist and gets sour?" Never unless from errors in watering, that are as common with ordinary pots; and I fail to see the benefit plants derive from arriving at the "flagging" point twice instead of once a day. In fact very little difference is found in this respect when the roots have taken full possession of the soil. Besides, I prefer potting firmly, so as to pack as much soil and nutritious ingredients into the pot, and leave as little room in it for air and water as is possible, both of which in excess tend to rapid extinction of the nutritious elements of the soil.

It would be interesting to know (admitting the force of such objections which, I do not) how much more air penetrates the side of a common pot when—as they very often are—covered thickly with green slime, or how much more evaporation goes on than in the case of glazed pots. If I knew of any cultural objections to the latter I would not use them, while on the score of appearance, cleanliness, and consequently labour, they have immense advantages. There is more saved in scrubbing and washing than covers their extra cost. In the case of gardeners who have much furnishing in mansions they are very handy, being always ready to pick up in a clean state, doing away with the much scrubbing often needed on emergencies.

Some of the most healthy Ferns I have seen were growing in galvanised iron pots, and no doubt some of your readers may remember the first prize Pelargoniums brought out at the great London shows over forty years since by the late Mr. Beck of Isleworth, and I question if the Pelargoniums of those days were not equal in cultural merit to any that have appeared since. How much air and evaporation passed through the sides of such vessels?

If my fifteen years' experience of glazed pots be worth anything I have no hesitation is saying that it proves the superior appearance, the saving of labour, and the constant cleanliness and comfort of such pots, and such experience has failed to reveal to me any cultural drawbacks in their use.—D. THOMSON.

[On more than one occasion flower pots glazed on the outside so as to render them practically non-porous have formed the subject of discussion in this Journal. So far as we know, all that could be said for and against them has been advanced by competent men; but discussions on passing topics appear to be soon forgotten by the majority, while every few years bring a host of new readers who are of necessity unacquainted with the matters previously treated and that are subsequently reintroduced. Letters have recently appeared of a nature that would suggest the subject as being entirely new to our columns, whereas many articles have been published from writers who are happily still readers of and occasionally contributors to them. Mr. D. Thomson some years ago, as he is now, was an advocate of glazed pots for plants, and we are not betraying any secret by stating that a gardener who was one of his most doughty literary antagonists, and a champion of porous pots, has long since been satisfied that he can grow plants as well in the kind of pots he once thought inferior as in those for which he claimed the advantage of porosity.

We have seen glazed flower pots employed with great success in the cultivation of different kinds of plants. One of the most conclusive examples of their suitability for the purpose for which pots are manufactured is afforded by Mr. Thomson himself. More than once we have had the pleasure of inspecting the plants at Drumlanrig, and their condition demonstrated in the most conclusive manner the perfect adaptability of glazed pots to Orchids and all other plants that were grown in them when judiciously watered and otherwise rightly treated as they were and are in that establishment; and after seeing those plants it would be impossible for anyone devoid of prejudice on the matter to condemn glazed pots as essentially unsuitable for plant growth.

Another very striking example of the successful employment of glazed pots equal in its way to the Drumlanrig experience that came under our notice was in the garden of the late Mr. Woodhead near Halifax, these pots being then almost exclusively used in growing one of the most extensive and healthy collections of Auriculas we have had the gratification of inspecting. Several houses were filled with them, and we cannot imagine how any plants could be more sturdily vigorous and thoroughly satisfactory. They were not luxuriant in the sense of being Cabbage-like in growth, with large succulent leaves that drooped under the influence of an hour's sun; but were remarkable for the leather-like persistency of their deep green foliage, while their stout stems and large heads of flowers required no sticks to support them. The cool breezes of the Yorkshire heights had no doubt something to do with the splendid condition of the plants, but it goes without saying that they would not have been in that condition if the glazed pots containing them had been even to the smallest extent disadvantageous. It may be surmised, however, that they would have been quite as good in the ordinary porous pots. That was not Mr. Woodhead's experience. He commenced using glazed pots experimentally, and necessity suggested them.

Mr. Woodhead's business often called him from home for longer periods than were good for his plants, which either suffered by drought in his absence or had to be watered before they needed it to "keep them going" till his return, and sometimes they suffered from the excess of water when the weather proved different to prognostications. He had heard that plants in glazed pots required

water less often than in the ordinary kinds because the soil in the former remained moist for a greater length of time, and he resolved to try a few and note the results. These were such as to justify an addition of glazed pots yearly, and eventually the ordinary rough porous pots were discarded, except a dozen or two which he retained for a prolonged test, so to say, and permanent comparison. At the first, and for some months, the plants in these grew as well in the others, but occasionally were caught flagging, and they never finished so well as those in the glazed pots, which numbered a few thousands. This was accounted for, not so much by the occasional check the plants in the porous pots received by getting too dry, but by much nutriment being washed out of the soil by the far more frequent waterings which had to be given to them. It was computed that four times more water passed through the soil than was required to be given to an equal number of plants in glazed pots, and, consequently, the soil's virtues were largely washed out in one case and retained for the support of the plants in the other. That was Mr. Woodhead's opinion, founded on observation and experience, and there is little doubt if analyses of the soil and drainage water had been conducted that science would have proved the correctness of his reasoning. Mr. Thomson alludes to that aspect of the question in a significant sentence in which he says—"I prefer potting firmly, so as to pack as much soil and nutritious ingredients into the pot, and leave as little room for air and water as possible, both of which in excess tend to rapid extinction of the nutritious elements of the soil."

Growers of those fine and floriferous plants in small pots for market press the soil firmly, in fact hard, without all of them knowing the *rationale* of the procedure, but they know the plan succeeds, and those expert cultivators would grow every kind of plant they take in hand equally large and well in still smaller pots if glazed and with less time occupied in watering ; but they cannot do so because pots are sold with the plants, and these have to be disposed of at the lowest possible prices in markets. And besides, the labour of watering can be, and is, reduced by plunging, the plants growing as quickly, if not more quickly, with the pots sunk up to and over their rims ; and in that case what becomes of the alleged necessity of air passing through the sides of the pots to support the plants ?

If water is given when the soil is in a fit state for its reception, and only then, quite sufficient air is conveyed to the roots of plants and retained there for all their necessities ; and when plants in glazed pots refuse to thrive we are convinced it is not the fault of the pots, but of errors in management either in respect to compost, drainage, or watering. Growers of Chrysanthemums for exhibition, who very properly object to plunging the pots, might do worse than try some that are glazed outside, and they would find the labour in watering sensibly reduced, while the wearing or sustaining capacity of the soil would be prolonged ; but it would be necessary to exercise great care against overwatering, or the experiment might be the reverse of beneficial.

Glazed pots are necessarily more costly than the ordinary kind, and on that account their use will be limited, though for certain purposes they have claims to attention ; and if a demand should arise for them their production would perhaps be cheapened, as manufacturers of ordinary kinds would soon find the cheapest methods of glazing by the natural force of trade competition. Much more could be said on this subject, though it is not easy to add weight to Mr. Thomson's experience, confirmed by Mr. James Cole's success, and all we will do now is to express our conviction that the supposition of ordinary flower pots possessing special virtues because the material is porous, and that the more porous it is the better the pots are for plants, though a popular view, is a popular fallacy.]

A CHAPTER ON BROCCOLI.

Some of the winter and early spring Broccoli failed to head in due season, and although this might be felt as a hardship at the time it does not prove to be so, as at present all vegetables are uncommonly scarce, and the Broccoli now heading freely is really the only vegetable many possess. This I am sure will be the means of impressing their usefulness on the minds of those who have them, and probably it may occur to those who are buying them, and paying 3d. each for very small heads, that they could grow them more cheaply. The absence of spring Cabbages is much felt, and the Broccoli have become so prominent that their culture is sure to become more popular. Where gardens are too small to admit of very many being grown I would not have autumn or early winter varieties. Other vegetables are plentiful at that season, but it is in March, April, and May that the scarcity is most felt. The Broccoli season begins in November and continues to the end of May. If some can be grown to give a supply in every month between these dates they will be greatly valued. January and February are, as a rule, the most uncertain months for their heading. Varieties are recommended to head then, but should sharp frost occur they will not do so ; and although we have plenty of ground on which to grow Broccoli I am always inclined to limit the varieties that are said to head then, and give more space to later ones, which I know will come with certainty.

As to the value of Broccoli there cannot be two opinions. They are simply indispensable from autumn until summer, and from the middle of April until the middle of May is a very important time in connection with their culture. This is the season to sow the seed of all the varieties. There is no advantage in sowing it before this, as the plants are not wanted too early ; but after the middle of May it is late to sow, as although the plants may grow, and will grow if sown in June or July, they do not gain their full size before the winter, and a half-grown plant is always more tender and liable to be injured by frost than a fully grown one. Little half-grown plants are never remunerative.

As a rule we find Broccoli seed very good, and it germinates freely. A half ounce packet of seed of any variety will produce many scores of plants. The seed is best sown in nursery beds either in rows or broadcast, but where space is limited the latter plan is best. Keep the varieties separate, or some early varieties may be planted with the very late ones, then the piece will be patchy before they are all ready for use. Let the seed be evenly distributed, and it should be covered to the depth of 1 inch. Make the soil firm on the surface with the rake or spade, and do not let the birds pull up the young plants as they are coming through the soil. If the seed is sown now the young plants will, under favourable circumstances, appear in a fortnight. They will be 4 inches high by the beginning of June, and some of them may be transplanted then. It is good practice to take an early crop of Turnips, Potatoes, or Spinach off the ground before the Broccolis are put in, and if these are not cleared by the time the Broccoli are ready for planting do not allow them to remain in the seed beds to become overcrowded and drawn, but take the largest out and dibble them in elsewhere at a distance of 3 inches apart, keeping them there until they can be planted in their permanent quarters. This transplanting will benefit them in more ways than one. It will make them grow very compact. It will cause the roots to form a close mass, and then transplanting may be done without their receiving the slightest check. We treat many of our Broccoli plants in this way.

As to the best place in which to grow Broccoli there need be no difficulty. They will grow everywhere. We have had them good on light, heavy, and medium soils, in exposed positions and shaded positions, but we are averse to putting them in the latter. The majority of them having to stand out all winter they cannot be grown too much exposed to harden them. Neither am I in favour of growing Broccoli in rich soil. This will soon induce them to become huge luxuriant plants, but they will not stand severe weather. Some of the best Broccoli I ever possessed were grown in a field. The soil was not so rich as that of most gardens, and it was very firm, and this certainly induced the plants to be very hardy in character. I am therefore in favour of treading the soil firm as soon as the young plants begin rooting into it. The weather is often hot and dry when Broccoli are being planted, but if they are thoroughly soaked at the roots the night before being transplanted, and well watered once the day after planting, that is all that is necessary.

Having to make the most of our garden, we often try the plan of double cropping. This may be done in various ways. One way is to plant the ground with Potatoes in April, keeping the rows 2 feet 6 inches apart, and when the Broccolis are ready for planting, put a row in between every two rows of Potatoes. In past years I have recommended this plan, but I shall not do so now. The Potatoes are apt to make a great deal of top growth, so as to completely shade the Broccoli at a time that they should be completely exposed and laying the foundation of a substantial growth, that I much prefer to grow them quite unhampered. I find good plants and fine heads can be grown if the plants are put in at a

distance of 2 feet from row to row, and 1 foot 6 inches from plant to plant. The varieties of Broccoli are very numerous. I could name dozens, but only grow about six. We begin with Veitch's Self-protecting Autumn variety, and end with Sutton's Late Queen. Osborn's Winter is still a good sort, and as a main crop variety we grow Webb's Perfection.—A Kitchen Gardener.

CULTURE OF THE DOUBLE VARIETIES OF PRIMULA SINENSIS.

[A Paper by W. H. Divers, Ketton Hall, Stamford, read at the Meeting of the Scottish Horticultural Association, May 7th, 1886.]

(Continued from page 334.)

Treatment of the Young Plants.—For ordinary cuttings the period of striking will be from four to six weeks, and when the roots reach the sides of the pots (which may be known after a little experience by the appearance of growth in the top) they may be removed from the propagating frame and set on a moist bottom in a moderately close house or pit, and gradually accustomed to plenty of air, with a little sunshine at times when not very bright, such as early in the morning and after four o'clock in the afternoon. Generally speaking, the cuttings will be ready for a shift into larger pots about six weeks after they are placed in the pit, provided they have grown in the meantime without a check. For the earliest struck plants that are to flower in November and early winter (if they are growing freely) I prefer 32-size or 6-inch pots for the first shift, at any rate for the strongest of them, and this answers for a final shift also. If any of the plants are weak we place them into 48 or 4-inch pots at first, to be eventually repotted if necessary. I know the 32's or 6-inch pots will be thought too large a shift at first by some cultivators, but provided plenty of water is supplied with extra care for about three weeks no harm can ensue, and I find it better than checking their growth by another shift later in the season. The second supply of cuttings for flowering at the end of the season will probably only require 48's or 4-inch pots when they are repotted, as it is best to have the pots well filled with roots before the cold and damp weather of autumn comes on.

Summer Treatment.—The best place to grow them in after they are potted is a brick pit or a frame facing the south if in the midland and northern parts of England or Scotland. For the south of England, such as Kent or Surrey, a northern exposure is best in the summer months. Here we find pits from which early Melons or Potatoes have been cleared to answer admirably for the young Primulas, as they only require the soil to be levelled and about 2 inches of coal ashes spread on, and they are then ready for the plants. These will still require shading from bright sunshine, but should be allowed more exposure as soon as they are established, say until seven o'clock in the morning and after five o'clock in the afternoon. This is necessary in order to prevent their drawing up to an inconvenient length in the foliage. As the sun declines in power these hours may be altered accordingly. Plenty of air should circulate over the tops of the plants during mild weather both day and night. The plants always thrive best when standing on a moist bottom, such as coal ashes, which should be slightly stirred occasionally to prevent their being covered with moss.

When the pots are filled with roots supply liquid manure occasionally. I prefer the drainings from a cow yard freely diluted with water according to its strength, and given at every second watering; if this cannot be obtained weak guano water may be used, or some sheep dung and soot may be soaked in a tub and the liquid freely diluted with water before using. As the weather becomes cooler and frosts commence, less water must be given and no more liquid manure, or the roots will perish. When the days are shorter and sun heat much less, scarcely any water will be required while they remain on the coal ashes, but give them more exposure to sun and air to stop growth as much as possible, and to consolidate the tissues of the plants. Should any dull damp weather occur in October they must be moved to drier quarters, and this will be especially necessary if there are no means of heating the pit artificially. Shelves or front benches in early vineries will be a good position for them, or small span-roofed houses such as are used for Melon and Cucumber growing—anywhere, in fact, that is dry, well ventilated, near the glass, and that can be kept at a temperature of 45° to 50°, there they will flower and flourish to perfection. A little weak liquid manure twice a week will again be found beneficial, although they do not require it so often or so strong as when growing freely. Care should be used in watering during the cold damp weather so as not to wet the leaves or pour any into the hearts of the plants, all decaying leaves being removed as occasion may require.

A little air must be admitted whenever the weather is at all favourable in order to ward off damp. This circulation of air is necessary during all stages of this plant's existence, and if provision is made for it there will be no other great difficulty in the way of successful cultivation. In order to obtain this circulation of air among the plants more effectually during the winter season, those required to be kept at rest early in the winter for flowering the following spring must be placed in larger and more lofty houses if possible, as they will not then require so much fire heat to expel the dampness. I lately saw some plants of the old Double White at Burghley which had passed the winter in a cold house—that is, a house which has no convenience for artificial heating, and 15° of frost had been registered outside. How low the temperature went inside could not be ascertained, but the soil was frozen hard in the pots. These plants were in good health, and had a certain amount of flowers on them of good quality, although not such a quantity as those had in a higher temperature. It is only fair to say they had not been very liberally treated in other ways. I would not, however, recommend so low a temperature by any means, and only mention the circumstance to show what an amount of hardship they will endure, and that anyone who has not all the advantages I have mentioned need not be deterred from cultivating them.

Varieties.—Besides the old Double White or alba plena, there are, as already mentioned, several newer and so-called improved varieties. For yielding a large quantity of flowers and for general usefulness I prefer the old variety, but as specimen plants, and for mounting as separate flowers, the newer varieties are certainly a great advance, and when well grown are extremely pretty. Among the best of these are the varieties sent out by the late Mr. Osborn of Fulham called Gilbert's Burghley varieties, but really raised or selected as sports by Mr. Harris of Denne Park, Horsham, while gardener at Naseby Woolleys, Rugby. It has been stated they were raised from seed, but, if so, it is a curious circumstance that all four varieties sport into each other, and have also produced another distinct shade of colour since they were first sent out.

The best are Lord Beaconsfield, carmine red, and Marchioness of Exeter, large white, generally striped and spotted with pale lilac. I have grown individual flowers of the latter variety here which measured over 6 inches in circumference. Besides these I have at various times met with the following good varieties—candidissima, an improved form of the old Double White; Mrs. Eyre Crabb, Princess of Wales, and Blushing Beauty, all of which are white grounds more or less striped and shaded with pink. Among reds and purples are atro-rosea, carminata plena, Emperor, King of the Purples, magnifica, purpurea erecta, and rubra grandiflora may be mentioned, all of which are worth cultivating for the sake of variety, although, as a rule, they are not such free growers as the old Double White. Many of these newer varieties were at one time grown remarkably well by Mr. R. Kingston of Brantingham Thorpe.

Shading Late-flowering Plants.—Early in February, if the weather is very bright, it will be found necessary to shade plants in flower during the hottest part of the day. After the dark days of winter the plants are apt to flag very much, and if not duly attended to the flowers soon fade in consequence.

Insects.—The double Primula has one great advantage over many of the plants we are called on to cultivate, it is not subject to the ravages of insects. I have only found two kinds of any trouble, and these not seriously so. Mealy bug will sometimes take up a residence among the remains of the old dry leafstalks, and if it does so I need scarcely to caution gardeners against introducing the plants into their vineries and fruit houses. The bug may easily be cleared away from these plants. The other pest is the larva of one of the weevils (Otiorhynchus sulcatus), which, in the form of a small white grub eats its way into the stem of the plant just below the surface of the soil, and continues feeding on it until eventually the plant withers. I know of no means to prevent this, as there is no evidence of anything being amiss until the plant begins to droop, but all the mischief is done then. Fortunately it is not of very frequent occurrence. The perfect insect is a small dark-coloured weevil, which is very fond of the leaves of Camellias, Vines, and Peaches. I have an idea that the use of cocoa-nut refuse for potting purposes encourages this insect, and therefore I have not recommended its use, although I know Primulas are very fond of it.

I have now carefully given every particular necessary to grow these plants to perfection. If any have been wearied by so many small details, I claim their forgiveness for the sake of the younger members of the profession. It is only by strict attention to the smallest matters that one can excel in the cultivation of double Primulas, or of anything else.

[In the previous article, p. 334, second column, line forty-five from the top, " when the ventilators are open " should read " when the ventilators are not open."]

ARTIFICIAL MANURES.

CONSIDERABLE credit is due to Mr. Dunkin for the general defence of his initial article on page 128, and I am also glad to note the tendency of our respective views to coincide on the main points, although at the same time I consider that a slight retrospect would help to clear away some of the "dust" that is evidently arising.

In the first instance, where I beg to differ from my opponent is when he advises the application of stimulants in which ammonia-yielding substances preponderate. If we wish for a strong and vigorous growth this, of course, is a natural result of such a proceeding. But, I ask, What is such a growth worth? Does the constitution of a plant improve because its bulk is increasing? I venture to say that such does not always follow; and I consider it doubtful practice to use strong ammoniacal manures alone for any plant, advising rather a judicious blending with some of the solidifying agents, such as potash, lime, and phosphates. That something undesirable follows the use of one kind of artificial manure Mr. Dunkin seems fully aware, and as every effect must have a cause I would recommend him to study the cause that compels him to change from one manure to another, so that a cogent reason can be ascribed for so doing.

This, then, is the point of contention, whether it is the better practice to apply several kinds of manures and stimulants consecutively, or endeavour to provide a food that will meet the requirements of the plant immediately. This your correspondent evidently thinks is a state of perfection never to be attained. But here again I beg to differ from him; for if we observe the vast improvement that has taken place in the composition of the various artificial manures that are continually being brought forward, we cannot but infer that eventually something like perfection will be reached. Not that one manure will ever be invented that will do for all and every member of the vegetable kingdom, any more than a pill will ever be compounded that will cure all the ills flesh is heir to, though such may be affirmed by the vendors.

What I believe is, that as the science of gardening progresses we shall see the cultivator of the future obtaining the manurial ingredients separately, and as he will possess more than a rudimentary knowledge of chemistry he will compound his own manures for special purposes much in the same way that the druggist compounds a standard remedy for a particular disease. I was glad to see Mr. Dunkin is in favour of the study of chemistry as a part of the education of every gardener, as by his previous article he gives one the impression that it is altogether too deep a subject for practical use, and even now he wishes to point out that "it is not wise to place too much reliance in only a rudimentary knowledge of it." Again I differ from him, being of opinion that if only the merest smattering of chemical knowledge were impressed on every lad during his apprenticeship more successes and less failures would be chronicled. For example, would not a very slight knowledge prevent such blunders as mixing caustic lime with farmyard manure? or would minute calculations have to be made to ascertain if a soil was deficient of lime? as a single application of dilute sulphuric acid to a sample would soon decide, and in the same way many other simple tests could be enumerated that would be of inestimable utility to even the rudimentary chemist. I trust that Mr. Dunkin will eventually see his way clear to favour these views and not think it "altogether too troublesome and expensive a method to have different manures for each plant." I do not utterly condemn the practice of changing from one manure to another, as according to the present limited knowledge it is the only general available way to supply the plant with its needs; but I oppose being contented with such clumsy and blind methods, but rather let us aim at a more scientific mode of supplying such a food as a study of a plant tells us is requisite.

This brings to my mind a testimonial I saw in one of the gardening papers from a noted American cultivator of the Camellia, where he says that he has been using for some time a certain artificial manure for plants that have been in the same pots for ten years, and they are, he adds, as healthy and as vigorous as recently potted plants. I ask Mr. Dunkin if he would advise his pet theory to be put into practice in this instance? Do not results clearly show that the manure used was absolutely a perfect food for the Camellia, and such being the case no change was necessary? This is not the only instance of a perfect food being produced successfully for a particular plant, there being at the present time several compounds in the market that the vendors affirm contain all the necessary ingredients to support the Grape Vine, and some of which have stood the test of years, and I certainly favour the excellent idea of manufacturing special manures for special plants. I am of opinion that if education increases as rapidly during the next fifty years as it has done this last half century, the coming generation of gardeners will look back with pity on even the present, and wonder how it was possible for such results to have been achieved under such blind and haphazard treatment. Much in the same way that we wonder how it was possible to practise successfully in some of the ancient glass (?) houses where the dictum "keep close to the glass" was fraught with meaning.

Turning again to Mr. Dunkin's recent article I fail to see where the case of misrepresenting his statements occurs, as if the giving of "nitrate of soda to a plant that is in a stunted and unhealthy state to get it into active growth again, and then when the object in view is attained to alter the food," is not substantially the same as giving it "a strong stimulant to start it and afterwards give it various compounds." I must be content with the epithet he so kindly bestows on me; still, I consider he is on the right track now that he advises the change to be such as experience proves to be right, so that I cannot but withdraw the imputation that it was fancy alone which guided his actions.

Referring to the application of lime to soil that has become overcharged with too much organic substances, I did not infer that the lime would spoil the soil to any extent, as may be seen on reference to page 274. What I intended to convey was that the danger of a too heavy dressing of lime would result in more of the ammonia contained in the organic remains being set at liberty than the plants could appropriate, consequently it would be lost, whereas, if trenching was resorted to at the same time that the lime was applied, the fresh soil would imbibe the gases liberated by the lime and so conserve it in an available form for future use. To practically demonstrate this theory, take a small portion of fresh soot, this we will suppose is the soil under operation; add to it about a tenth part of its bulk of fresh lime and thoroughly moisten the whole mass; in a few minutes if the soot is good pungent fumes of ammonia will arise. Now cover the heap with some moderately dry earth, and no fumes will be perceptible unless the gases given off are in excess of the capacity of the soil to imbibe them. When sufficient time has elapsed for all the ammonia to be driven out of the soot, carefully remove the soil and repeat the process, but using the soil in the place of soot, when it will be fully demonstrated that by the action of lime the ammonia can be transferred from one mass of soil to another with the utmost facility. This again is a reason why I contend even rudimentary chemistry is useful, as no one would, after performing the experiment, think of mixing lime with organic substances intended for manure.

Mr. Dunkin's idea that the application of lime imparts to the soil the power of retaining the moisture necessary for the growth of plants is new to me, being under the impression that an important factor in that direction is humus (formed from the decay of animal and vegetable remains), an excess of which renders the soil close and sour and unfit for healthy root-action, consequently it follows that where this material is abundant there is generally no lack of moisture.

As to the solution of the problem, why nitrate of soda applied to a pasture produced the most rapid and also appeared to give more permanent results than either bonemeal, native guano, muriate of potash, or superphosphate, I will give my ideas on the subject, and try to elucidate the mystery, if any, and show how easily false conclusions can be arrived at unless close observation is pursued. In the first instance observe it was a pasture, not a meadow, consequently stock were grazing on it. After the application of the various manures nitrate of soda, being by nature the most rapid stimulant, caused a quick succulent growth of herbage which the stock were not long in discovering; and to show their appreciation of good living they took up their abode on that portion of the field; consequently, as the nitrate was absorbed by the grass, and the grass consumed by the stock, it was returned again with heavy interest to the soil in the form of a properly constituted food for the grass, and, in point of fact, this quarter had the most thoroughly scientific manuring of the whole field. This, I think, I may venture to take as supporting my views, that all highly stimulating manures should never be used alone, but if permanent results are looked for they should be used in conjunction with either natural manure or blended with some of the substance providing mineral agents.

After intruding so far on your valuable space I will conclude by thanking my opponent for the generally courteous way in which he has replied to my criticism.—M. COOMBE, *The Gardens, Ashton Court, Clifton, Bristol.*

RICHARDIAS IN SMALL POTS.

FOR the decoration of the conservatory or the house, either singly in vases or in bold groups in the case of balls or evening parties, Richardias are always acceptable; but in no way are they more useful than when well grown in 6-inch pots. Plants with one, and in some instances two stems, standing 2 feet to 2 feet 6 inches high, carrying from one to four fully developed pure white spathes, are much more valuable for the purpose named than any larger plants with eight or ten stems, requiring 12-inch pots. The smaller plants do not require so much space when growing, and are preferable in many ways to the larger specimens. A group of say one dozen plants arranged closely together form a most agreeable background for Hybrid Perpetual Roses of various colours where such groups are appreciated. If the Roses are well grown the effect is very telling. The bright colours of the Roses come out to perfection against the background of green and white.

The treatment Richardias require is very simple, and consists in dividing the plants into single crowns towards the end of May, when all danger of frost is past. They should then be planted out singly. Ours are placed in a west border, where the soil is of a heavy tenacious character. During the summer the plants should not be too liberally supplied with water, or too much growth and roots will be made to go into small pots. All small growths should be removed from the base of each plant, not more than two shoots or crowns being allowed to develope. The last week in September or early in October the plants must be lifted and potted, using a fairly rich soil, loam predominating in the compost; to this add a small portion of decayed leaves and some finely ground bones. Pot firmly, allowing ample space for applications of water on the surface of the soil. Drain the pots carefully, as abundance of water will be needed later on.

After potting place the plants in a cold frame if possible. Failing this, stand them under a north wall for a time until the roots are running into the new soil, when they should be removed to a cool house, placing them as near the glass as circumstances will admit to prevent

the leaves becoming drawn and weak. Sufficient water should be given to the plants during winter to prevent the plants flagging until growth is advancing towards the end of February, when tepid liquid manure may be freely given. From that time the plants may be subjected to a temperature of 65° by night if they are required earlier than they would be in flower by following cool treatment.—PRACTICAL.



IMPORTED ORCHIDS.

FOR all uninitiated in the cultivation of Orchids imported ones in good plump condition are strongly advised. It invariably follows that if they can be established they can be successfully grown afterwards. Plants that have started and lost their growths should be avoided, for although they will break again, the eyes that do so as a rule are weaker than the first would have been. Some of the back breaks will come away strongly, but every eye lost in transit means the reduction of the plants. Those that have commenced rooting on the journey are the worst to deal with, for they require most careful management afterwards.

Upon arrival wash the plants thoroughly in tepid water, remove dead and decaying pseudo-bulbs, and cut off with a sharp knife all leaves that have been injured or bruised. The plants should then be placed in some position where they will dry quickly, and be arranged in the various structures in which they are to be grown. For the first fortnight Vandas, Aerides, Saccolabiums, Cypripediums, Cattleyas and others will do in a temperature of 50° to 55°. They are better for a short time in an intermediate temperature than in the stove proper. Those who have two or three structures for these plants may place them in after the first fortnight. In each case suspend them from the roof with their growths downwards, so that no water will lodge in the axils of the leaves. At first the moisture of the house will be ample, and after that time they may be syringed once daily until they are thoroughly plump and fresh. Syringe freely two or three times a day when the weather is favourable.

The plants named are better suspended until they commence rooting than if placed in pots or baskets. In fact if they are potted no soil should be employed about them until the formation of roots. The plants should be secured in position by crocks or charcoal. Odontoglossums, Lælia albida, and many others may be laid on a board or on damp moss in a temperature of 45° to 50° until they start, when they may be potted.

To attain success too much water must not be given in the early stages of the plants' growth. The supply should be gradually increased as the shoots and roots extend, and they must not be placed in too high a temperature at first to induce them to break. The plants are partially ruined if the first growths are prematurely forced out of them. Such plants only make weak growths in the first season, and are frequently a long time before they attain the strength they would have done under cooler and more natural treatment.—N. G.

CATTLEYA TRIANÆ.

A MUCH longer succession of flowers can be obtained from this Orchid than by growing the whole stock in the same temperature. The earliest are grown in the stove suspended from the roof in baskets, and not only flower earlier, but produce finer flowers and larger pseudo-bulbs than those grown the whole of the season under cooler conditions. No doubt this is due to the more thoroughly matured condition of the growth. There is, however, one drawback to the maturation of the pseudo-bulbs early in the season—namely, they are very liable to start again into growth. This must be prevented, and can only be accomplished by the removal of the plants after growth is completed, as far as appearances are concerned, to a much cooler structure, where liberal ventilation can be given and a greater amount of light admitted. By this means a second growth has been prevented, and the ripening and rest they receive under such conditions have proved beneficial.

While in flower these plants may be employed in rooms for a time where gas is not used, and cold draughts do not strike upon them, without the slightest injury. They are also perfectly safe in the conservatory, and a few Orchids at this season of the year add much to the attractiveness of such structures. Care must be taken not to overwater them while in these positions, most of the injury done to them arises from this cause. They need no more water than is sufficient to keep their pseudo-bulbs from shrivelling. Good plants of this description should not be crowded amongst others, for in so doing they lose half their beauty and effectiveness. The most prominent position in the house should be selected and the plants tastefully grouped by themselves, or with the addition of Ferns. Nearly all Orchids look well when grouped with an undergrowth of Ferns to hide the pots, pans, or baskets in which they may be grown.—B.

EPIDENDRUM BICORNUIUM.

THE beautiful species which so many people fail to grow satisfactorily is to be met with in splendid condition at two or three gardens near Croydon, perhaps the specimen at Croydon Lodge being the best. This is grown in a strong moist heat, where it makes larger growths and blooms freely every year. The enclosed bloom is from a plant now flowering at Birdhurst, Croydon, the residence of J. C. Lanyon, Esq. It is grown similar to the above, and each spike has carried about a dozen pure white sweet-scented flowers, which have been in perfection some time.—G. W. C.

ORCHIDS AT CHELSEA.

MR. WILLIAM BULL'S exceedingly beautiful exhibition of Orchids in his King's Road nursery is now regarded as one of the interesting events of the London season by the numerous visitors who annually make a journey thither during May and June. It was opened on Tuesday last, and in saying that the display is fully equal in all respects to those of preceding years, an ample idea will be conveyed to all who have seen previous efforts. There is the same wealth of flowers, the same graceful association of foliage plants with the Orchids, and the same taste manifest in the arrangement. But to show that there is always room for improvement, greater variety has been introduced, and the exhibition consequently presents a kind of conspectus of the most useful and beautiful Orchids for general cultivation, together with rarities and curiosities in abundance to satisfy the connoisseurs. No one could inspect an exhibition like this without being impressed with the fact that the value attached to Orchids is very far from being fanciful, and Mr. Bull justly claims to have assisted materially in popularising a most fascinating class of plants.

The house in which the principal display is provided is span-roofed, 120 feet long by 25 feet wide, with a central bed and two side stages, which are filled with Orchids, Palms, and Ferns, the rich colours of the Cattleyas, Lælias, Masdevallias, and Dendrobiums being agreeably contrasted with delicate Odontoglossums of the crispum type, and such graceful species as O. citrosmum with long drooping racemes of soft tinted flowers. Facing the entrance is a charming bank of Masdevallias and Odontoglossums, and conspicuous throughout the house suspended from the roof is the useful yellow-coloured Oncidium concolor. But to enumerate all the attractions of the display would occupy more space than can be spared this week, and we must therefore content ourselves with announcing the fact that the exhibition has been opened and is well worthy of a visit.

TWO HOURS AT SWANLEY.

SWANLEY, Cannell, and the Home of Flowers are practically synonymous terms. Mr. Cannell has made Swanley a familiar name in the horticultural world. A few years ago two or three cottages and a roadside inn were all that could be seen in the way of dwellings, and the surrounding land was devoted to agriculture. Now quite a busy townlike community has sprung up and is still growing, while all around are fruit farms, and in a hollow nestles what may almost be termed a village of glass, the structures which shelter the plants covering an area greater than all the cottages did at the time of the floral invasion. It is astonishing to see what has been accomplished in so short a time by the energy, industry, and business capacity of one man. What is the secret of this success? Enthusiasm tempered with sound judgment founded on practical knowledge and governed by common sense.

Mr. Cannell commenced business on the slope of a railway embankment. It was a mere "patch" of barren ground, but if it would grow little or nothing it would hold a few frames and a small greenhouse, and in these he could grow Fuchsias, doing all the work himself. He called this the "Fuchsia Nursery," and commenced advertising Fuchsias to be sent by post. The more he advertised the more he sold, and the more he sold the more he advertised, until he made for himself a position and a name that is familiar to the lovers of flowers in this and other lands. The railway embankment being no longer adequate for his expanding trade he migrated to the present scene of his labours. And a busy scene it is, for he does not do quite "all the work himself" now, but employs 110 persons. How many he will have in ten years' time to work his last addition of 300 acres no one can venture to guess, as he is as healthy and active as ever in body and mind, and has diligent sons to aid him.

Mr. Cannell has not only established his great business in popular flowers, but has done it without injuriously affecting the trade of anyone else; but on the contrary, he has increased the operations of many by inciting a love for flowers and creating a greater demand for them

than existed before, and he now largely supplies the "trade" in all parts of the country with plants for executing orders, and thus all parties are benefited. His stock of plants of a softwooded nature, such as the million can grow, is enormous, and in respect to certain kinds unequalled. Even plants that would almost seem to have gone out of fashion are provided at Swanley in tens of thousands. For instance, a 100 feet long house is packed with gold and silver, bicolor and tricolor Pelargoniums in small pots. "What are all these for nowadays?" the visitor asks in astonishment. "Oh," Mr. Cannell replies, "somebody is always wanting them, and trade and private orders are always coming in, and a good many are wanted abroad, so we keep up the stock, the best in the world, and the world seems to know it." It is the same with Verbenas, which are also in thousands, clean thrifty little plants, growing like Radishes, and in finer varieties than were ever seen during the great Verbena-growing period. Nobody else keeps complete stocks now of the new and choice varieties, so the world comes here, and there appears to be sufficient Verbena growers in it to keep the department lively, and, observes their great patron, "more would grow them if they knew how beautiful and sweet they are, and how delightful when well grown in pots under glass in greenhouses or frames, to say nothing about the bedders in the garden." Then we come to a 100 feet house of succulents—Cacti in all their sections, Mesembryanthemums, Echeverias, Sedums, Sempervivums, Aloes, Haworthias, Rocheas, and others—some chastely beautiful, others singular and even grotesque, and altogether such an assemblage as is not to be found in any other trade establishment, so it seems there are sufficient fanciers of the curious in vegetation to keep this house a-going.

If there are such stocks of plants that are not commonly grown, what is to be said of those that are wanted in almost every garden and greenhouse? What, for instance, of the 1200 varieties of Chrysanthemums? The number of plants is bewildering, as it is of Fuchsias, Pelargoniums, Begonias, Gloxinias, Dahlias, with several houses full of Primulas seeding, others gay with single and double Cinerarias, one 200 feet long crowded with tree Carnations, some packed with Cyclamens, and so on, not an inch of space in the crystal village being wasted; and the plants appear to boil over out of the houses into frames, and from frames into the open, as fast as they become hardy enough or the weather becomes mild enough for their reception. But the prolonged cold is a serious impediment to free progress, and the season is one of the most difficult that has had to be encountered at Swanley. A country nurseryman, who travels largely, but who had not seen the Home of Flowers before, was struck with astonishment with the immensity of the provision for the season, and his pocket-book was in constant requisition, for he could not resist the claims of such Zonals as Mrs. D. Saunders, Dante, Edith Little, Hyacinth, Rose, Swanley Gem, Empress, Love Gold, with others, and especially the Swanley Double White, the dwarfest, freest, and best yet seen, and that is probably destined to spread all over the country, and beyond it. But why name names, for are they not all to be found in the catalogue, with the descriptions of the flowers, fairly, yet fascinatingly displayed in the inimitable Cannellesque style? "Never," said the country nurseryman, who had bribed me with a good dinner to be his guide on the occasion, "never have I seen so much in its way in so short a time; and now let us have a rush for Philip Ladds."

If Swanley is a Home of Flowers, and it is, it may be with equal accuracy described as a Home of Fruit, for even nearer to the station than the plant emporium is the wonderful establishment where Grapes and Tomatoes are grown to the extent of scores of tons, varied with a small culture of Maréchal Niel and Gloire de Dijon Roses, covering the roofs of twenty span-roof houses of an aggregate length of nearly half a mile—all for supplying blooms for market. But that represents a mere "patch" of the glass in this remarkable establishment, for the houses, which are admirably built, cover ten acres, and the proprietor has three other "places" of a similar nature. They are a few miles apart, for the reason ascribed by the shrewd man, that a hailstorm might make a grand smash in a particular place, but it would be a wonder if it smashed all the places thus distantly situated at once.

Speaking about the Roses, it may be stated for the information of those amateurs who are afraid of using the knife how this forest of Roses is treated, and for the information of those whom it may concern how two other crops, so to say, are got out of the same houses. Under the Rose-covered roofs Spiræas are grown, splendid plants for market, the shade just suiting them. In other houses are packed small Camellias in thousands, the shade suiting them too. Here, then, we have a crop of plants in pots on the floor—the soil—with a narrow path between them down the centre of each house, and a golden harvest of blooms on the roof above them. But there yet remains the crop of fruit. The crop of Rose blooms is nearly over now, and very shortly every stem of every Rose tree will be cut down—the whole of the growths that have produced the flowers—to the base of the rafters, and the roofs will be clear again. Then the borders are planted with Tomatoes for fruiting in the summer, and in the meantime the Roses push forth shoots again, and these grow vigorously up to the apex of the house for producing the next year's crop of blooms. "But these must shade the Tomatoes, and Tomatoes will not do in the shade," say the orthodox. Mr. Ladds, however, does not work on professional gardeners' lines; but while they are preaching and teaching what cannot be done, he sets about quietly and quickly doing it. He believes his heterodoxy to be a good deal more profitable than their orthodoxy, and prefers employing men who have not learned what he regards as "fancy notions." When he spends thousands of pounds in preparations he wants his money back again, and he manages to get it much quicker than it would come in under ordinary methods of procedure.

There is scarcely a gardener in Britain who would have believed the gravel bed on which the houses stand could be made to grow Roses and Grapes profitably, but new borders of fresh soil would have been regarded as essential. Fancy clearing out the "poor" soil 2 feet deep from even half of 10 acres of ground, and carting in fresh in its place. It would mean ruin. Mr. Ladds removes no bad soil, but "shoves" in manure till he makes it good enough for growing anything. That is his plan, and the poorer the soil the less likely is it to turn sour with the dressing. If any reader should think the soil is not so gravelly as represented let him visit the place and look at the surface of the ground between the rows of Strawberries alongside the finest vinery in the kingdom, and he will see little else but gravel, and a thicker and better covering than is seen on many a carriage road; yet in this mass of small round cobbles grow the Grapes and the Roses.

But to the Tomato shade. In the first place the plants get a good start before the Rose shoots cover the roof, and then the shade is not very dense, as there are glints of light passing through to the plants beneath, and thus useful if not heavy crops of Tomatoes are "stolen" from the Rose houses. These houses are low, just high enough for a 6-foot man to walk through them; they are side by side, supported on pillars here and there instead of divisional walls, so that if you stoop down and look along underneath you may see perhaps an acre of ground covered with a series of span roofs. That is the cheapest way of building a great block of glass for growing a "lot of stuff" for sale.

Before leaving the Roses it may be remarked that many thousands are grown in pots, Niphetos maintaining its position as a producer of white blooms for market. But a new Rose merits a passing note. It is not known by rosarians generally, but apparently will not long remain in oblivion. It was raised from seed by Mr. Ladds' plant-growing foreman, Mr. Herbert Kelsall, and although three years only have elapsed since the seed was sown, six thousand plants are now growing luxuriantly, and many flowering freely. It is one of the most vigorous of growers, the strong shoots terminating in great clusters of buds. These being cut as they open daily, only half, or less than half, open blooms were visible, these having much of the pointed shape of Niphetos, and of light lively rose colour. The plants grow and flower over a long period, and in sturdy robustness surpass all others in the establishment. The value of this unnamed seedling for the purpose for which the plants are grown is exemplified by the extent of its propagation, and Mr. Kelsall may be congratulated on his work. Many thousands of plants of different kinds are grown besides Roses, but these cannot be alluded to now, though a word must be said on the Grapes.

Four varieties are mainly grown—Black Hamburgh, Black Alicante, Muscat of Alexandria, and Gros Colman, the last-named the most extensively. Here again orthodox methods are cast to the winds, more particularly as regards distances in training the rods. Three feet at least for the majority of Grapes, and 4 feet or more for the robust growers represent the teaching of advanced gardeners, but does not represent Mr. Ladds' practice, and he probably cuts a far greater weight of fruit out of houses of a given length, and in say three years from planting the Vines, than any wide-planting advocate has yet produced; but it must be distinctly understood the object in view is not a few 4-lb. to 7-lb. bunches for exhibition, and enriching the tables of distinguished diners, but the greatest possible number of bunches, ranging from a little under 1 lb. to about 2 lbs. or so, for packing in large bulk to meet the requirements of the majority of purchasers in the chief markets. This is accomplished by training the rods 18 inches or less than that asunder, and even those of Gros Colman do not exceed the distance named. The sight is unusual, and the heavily cropped Vines of last year appear as if they would be still more heavily laden, as they are growing strongly and showing fruit abundantly. When the crops are ripening, the bunches must nearly or quite touch each other, and what the sight must be then in the chief Gros Colman house, where there will be an uninterrupted view of nearly 700 feet, both sides of this span of 25 feet being packed from base to apex, can in some degree be imagined, but not fully comprehended without a peep through this tunnel of fruit. All being well I intend to steal a glance of the scene in September if it cannot be managed in a more legitimate way.

In a block of several houses Cucumbers are growing after late Tomatoes, and 150,000 Tomato plants are in preparation for planting. The gravel path in one big house was being broken up just as if picking up a carriage drive, and seedling Tomatoes inserted in it a few inches apart, to be eventually lifted and planted—the most extraordinary nursery bed that was probably ever seen. Possibly it was thought, as weeds grow in gravel walks, Tomatoes would grow there also, and not be of a succulent character, and so the space was turned to account. If some "high" cultivators were to see a man engaged in work of that kind they would think he was crazed.

Two houses are just completed. They would have been in one but for an inequality in the ground. The space covered by the triple spans is 800 feet long by 75 feet wide. The roofs are supported on pillars, and the space well heated. The ground is mainly covered with Strawberries and Roses in pots, but the ultimate object is, I think, a vineyard, into which I quite intend smuggling myself on some pretext or other, perhaps to buy the crop as it hangs, at some future time. Mr. Thoms is Mr. Ladds' fruit foreman, and only a man of great capacity like his master could manage successfully such a gigantic charge. My friend whom I ventured to take down to Swanley is a man of rather large ideas, but after a two-hours rush through the two establishments had, I fancy, a

little conceit taken out of him, and left with his former remark emphasised, "I never saw so much in the time in all my life!"—A Londoner.

ACACIAS.

Your illustration of A. cultriformis, page 301, and the bountiful supplies of flowers we have had from our plants of late, induces me to write most favourably of this useful class of spring flowering greenhouse plants. It is impossible to over-estimate their value for greenhouse and conservatory decoration in March and April. They are all yellow, but that is not a defect, as they differ in shade, some being very pale, others of the deepest gold. Their habit of growth is excellent, and they flower in the greatest profusion. Plants so small as to be confined to 6-inch pots produce large quantities of flower, and large bushes, particularly those that are planted out in beds or borders, bear armfuls, or, I might almost say, cartloads of flowers. A backward spring may retard many flowers in cool houses, but no severe weather will prevent the Acacias expanding.

The habit of many is very graceful; the foliage is an agreeable green, and they are therefore well adapted to become permanent occupants of the greenhouse or conservatory. When planted out they do not flower all the year round, or anything like it, but no one could say they were unsightly when not in flower, and I am greatly in favour of their being planted out. When once established they will not only bear any amount of cutting when in flower, but the branches taken off in spring will be replaced by many more before the season is over. I do not approve of old scraggy plants being turned out of pots because they are not doing well with the hope of improving them, as this is certainly not giving them a chance to make a good beginning, but if healthy young plants are placed out at this season they will soon make rapid progress. Soil composed of three parts loam, one of peat, and a liberal dash of sand suits them in both beds and pots. Plants growing above perfect drainage succeed better than when drainage is deficient. We never shade our plants, but give them copious supplies of water when making their young wood.—M. M.

JOTTINGS.

In a busy horticultural life memoranda accumulate with surprising rapidity, and to relieve one's memory, or to permit the cancelling of congested note-books, a few paragraphs will be occasionally contributed under the above heading. Some will touch on small matters, and their chief object will be to serve as hints to those who have the time or opportunities to elaborate them, or to record observations and items that can scarcely be classed under any other special title.

PRIMROSES.

We had to wait rather longer than usual this season for our display of Primroses, but they have amply satisfied us for the delay, and are still in most floriferous condition. These and the Violets always seem to be the most welcome of the early flowers, and neither required any political associations to increase their popularity. Primroses in particular, even the common varieties, possess such fresh distinctive charms that they commend themselves to all garden-lovers, and now there are so many varied and brightly coloured forms they constitute quite a large group of useful plants. My collection is small, but it is increasing, and it probably affords me as much pleasure as many that are more extensive. About two years ago I obtained some plants of Mr. Gilbert's beautiful white Primrose named Harbinger, and with them formed a bed near the house, where they have for the past fortnight been crowded with large flowers. They flowered very well last season, and some seed was ripened from which nearly 200 plants were raised. These have all flowered in the present season, and include some interesting variations, though, strangely enough, only three out of all the number have come like the parent—namely, with white flowers. The flowers from which the seed was obtained was carefully self-fertilised; as the idea was to procure a larger stock of such a valuable variety as Harbinger undoubtedly is when true. The other seedlings are all delicate yellow Primroses of a very fine type, except three, which are of a rich crimson shade, the flowers well formed and inclining to the Polyanthus habit, as also do some of the yellow varieties. The majority of the latter were planted out, and are fully equal to Harbinger in all its good points except the colour; the flowers are $1\frac{3}{4}$ inch in diameter, of good shape, very freely produced, and the plants strong. Harbinger and the crimson seedlings have now been crossed, and I shall expect to secure a still more varied progeny. I do not know the history of Harbinger, but it seems to have been selected from Primroses of the Polyanthus type, and the seedlings show a rather interesting reversion to the original stock in one generation.

Enormous quantities of Primroses were brought into the metropolis for Primrose Day, and it would be impossible to estimate how many thousands of bunches were sold on that day, but the following facts will give some idea of the demand. At the Crystal Palace, Sydenham, a Primrose Fête was held, and Mr. W. G. Head employed in a very tasteful arrangement upwards of 14,000 bunches. These were disposed in an undulating bank 60 yards long by 2 or 3 yards wide, with 5000 bunches of other flowers, 150 pots of Daffodils, and 300 British Ferns in pots specially forced for the purpose. The majority of the Primroses sold in the market at early morning at very small prices, but subsequently as much as 2s. 6d. per dozen was realised.

NARCISSUS TRIANDRUS ALBUS.

Under the name of Narcissus calathinus this charming plant has been repeatedly noticed in the past two years, and it was grown as such in the Royal Gardens, Kew. It has, however, since been found that the name is incorrect, and that the true N. calathinus is much scarcer. As N. triandrus albus (fig. 45) it is, however, equally worthy of cultivation, and it is one of the best of the smaller flowered Narcissi for pots. I have an example in flower now that shows the characters of the plant admirably. A 32-sized pot contains about fourteen bulbs, each bearing a scape with from one to three flowers, the total being thirty-two elegant creamy white slightly drooping flowers. They have been expanding for the past fortnight, and will last for at least another week, as they are not all

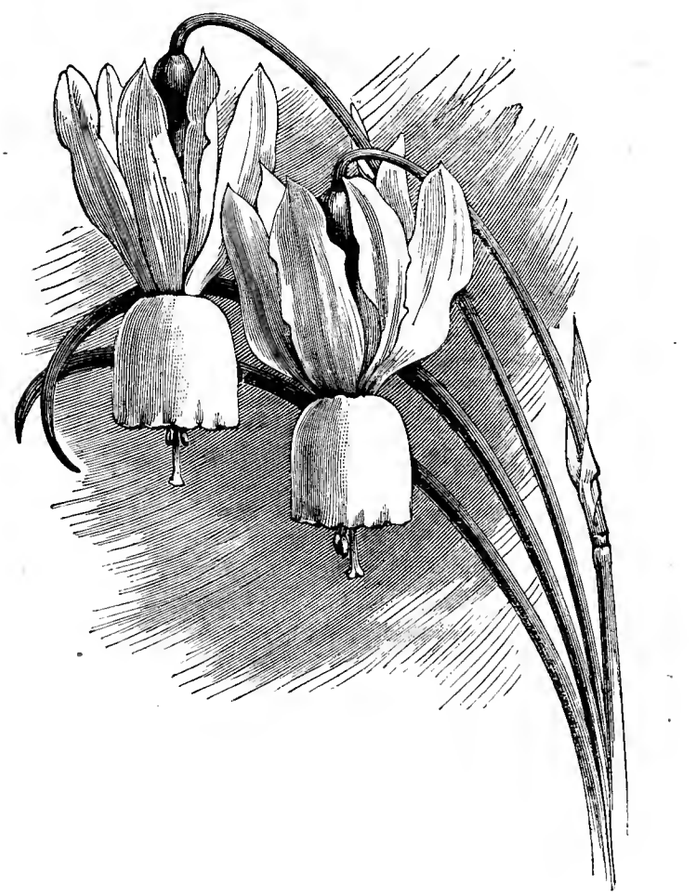


Fig. 45.—Narcissus triandrus albus.

fully open yet. Several of the scapes have three flowers each, but in Messrs. Baker and Burbidge's work on the Narcissus it is figured with four flowers to a scape. The plants have been in an unheated house all the winter, but were placed out of doors in a sunny position last summer to ripen the bulbs, with the result that they have flowered much more strongly this season than last.

COVENT GARDEN MARKET ON MAY DAY.

The different seasons have their special attractions in the Covent Garden Flower Market, but scarcely a better time than the present could be chosen for an early morning visit. On May 1st the market was particularly full and busy, plants and flowers being apparently in strong demand. Amongst the plants Marguerites in 48 and 32-size pots were remarkably numerous, fine graceful little bushes well flowered, and especially valuable for decorative purposes and window boxes. Pelargoniums, both Zona's and the decorative or regal varieties, contributed a wealth of colour. Cinerarias also afforded some rich tints, with Fuchsias, Spiræas in thousands, capital dwarf Hydrangeas with large heads of pink flowers, Deutzias, Heaths, and Rhodanthes. The last named, particularly the white variety, are great favourites, and grown as the plants are in frames they have not the drawn thin appearance so frequently seen in gardens. Forced plants of Lilium candidum, with the pure L. longiflorum, also occupied a considerable space on

several stands. The foliage plants were chiefly Palms, such as Kentias, Geonoma gracilis, and Cocos Weddelliana, with Ferns (Adiantums and Pterises), the much-enduring Aspidistras, and Cyperus laxus or alternifolius.

The cut flowers were also in strong force, Daffodils and Wallflowers nearly sharing the honours in point of numbers, but the latter were in the majority, for some of the larger growers took the market by storm, bringing some waggonloads of stout bunches of dark fragrant flowers. Daffodils were there in all shades, from white to the richest golden form of the trumpet flowered section, together with the delicately pretty Poeticus varieties. Forget-me-nots, Roses, Violets, Gardenias, and Stephanotis were prominent in other directions, while of Hyacinths there were some hundreds of boxes, showing that the exportation of flowers from Holland to this country has by no means been stopped by the Society formed for that purpose, though it has probably been checked. On the previous day a large sale was held in the market, when shallow boxes containing several dozens of spikes were sold at from 1s. 6d. to 4s. each, the white varieties realising the latter price.

On Thursday a "Fruit Show" of a rather remarkable character will be held in the Floral Hall, for one of the salesmen announces that he will have 5000 Pine Apples on view, to be subsequently sold by auction. Such exhibitions as these and those in the flower market are even more interesting to horticulturists than the ordinary competitive displays.

WHINHAM'S INDUSTRY GOOSEBERRY.

Amongst useful varieties of Gooseberries for market culture Whinham's Industry has gained an astonishing popularity. It is very early (three weeks, it is said, before any other). The fruit is large and red, crops heavy, and valuable either for picking green or when ripe for jam. One firm in the north of England that has made a specialty of the variety, in 1886 sold 35,000 bushes, in 1887 over 53,000, and in the present year 95,000. These were dispatched to America and various parts of the Continent, including the home supply.—L. CASTLE.

THE NATIONAL AURICULA SOCIETY.

(SOUTHERN SECTION.)

THE annual Exhibition, of which a report appeared in last week's Journal, was held under very discouraging circumstances, for anyone who has ever grown Auriculas must have felt what a terribly late season we have. I had not one single truss out, and it is only where there were appliances for heating that it was possible to have flowers in bloom. It is idle people talking about there being no change in our climate. We may be in the midst of a cycle of late seasons, and there may have been such a cycle before, but ever since I have grown Auriculas, a period of fifty years, I always calculated on, and was not disappointed in having a good bloom by the 20th of April, which was the date the older growers of the early part of this century used to assign as the orthodox time of blooming. In those days the application of heat to Auriculas was never dreamt of, and I believe had it been mentioned would have been universally scouted. I am one of the old-fashioned people, and I still unhesitatingly declare that the practice is an injurious one. However carefully it may be done it is injurious. I have not the slightest doubt that it tends, while perhaps increasing the size, to destroy the refinement of the flower, and this is one of its greatest charms. Doubtless had it not been for the use of heat there would have been very few flowers on the 24th, and so the evil is somewhat mitigated, but where exhibiting is not the chief object, growers will, I am sure, do best to grow their plants in the old way.

In my opinion the Exhibition of last Tuesday was a long way behind most of its predecessors, I fancy in the numbers, and in quality certainly of the flowers exhibited. It was unfortunate, too, that the day was so dull. The hall at the best of times is not light, and with such a day it was especially dull, and I need hardly say that a good yet subdued light is absolutely necessary in order to see well the beauties of the Auricula. My reasons for regarding the Exhibition of Tuesday as not up to the standard we would wish to see are—1, There was in most of the stands an undue preponderance of selfs; in many cases fully one-half of the flowers were of this class. Now, while they are very beautiful, I think it will be generally admitted that it is the least advanced and the most easily grown of the four classes of show Auriculas. Whoever attempts to grow seedlings is, I believe, pretty sure to get a large proportion of this class amongst them. They are, moreover, the earliest to bloom, and I think this is the reason why so many of them were shown. The season is a remarkably backward one, and hence those flowers which came in early were seized upon to make up the stand. A well-balanced stand of twelve ought to contain three each of the four divisions. 2, In many of the stands Auriculas were shown with only three pips, and I do not call that a truss. The old rule used to be that every edged flower must have five, and every self seven pips, and often even where there were only three pips they were not all fully expanded. I must think that, considering the number of plants many exhibitors grow, that they must have been very hard up to have put up plants with such small trusses. 3, There was in most cases a great deal of coarseness in the flowers. I have before my mind several plants with flowers utterly out of character, many with great goggle eyes, as my old friend Mr. Jeans used to call them, many with body colour too heavy and running into the edge, and others with crimpled and curled petals, as if all the heat they had been subjected to had not even been enough to open them fully. 4, The very few really first-rate examples of the old-established varieties. There was, for instance, in my judgment not more than one or two really first-rate trusses of George Lightbody, not one of Prince of Greens or Acme, but one or two of Lancashire Hero. In the classes for single plants this was the more conspicuous; classes where one has been accustomed to look for and find good examples in profusion of these "cracks," there were very few of them. I have no doubt that the wise rule of restricting growers to two plants has lessened considerably the number of those exhibited, but it ought and would in ordinary circumstances have done so, but as I have already said, the lateness of the season and the consequent need of a good deal of heat have contributed very much to the mediocre character of many of the blooms exhibited to-day.

I think that perhaps the most interesting part of the Exhibition was the number of seedlings exhibited by such raisers as Messrs. Horner, Douglas, Bolton and others. One is very much astonished to think of what the old raisers did without any scientific knowledge or any artificial hybridising, for I do not believe that Headly, Lightbody, Read, Lancashire, Heap, and others ever hybridised their flowers, and, as I believe, it will be a long time before the flowers that were raised by them will be beaten out of the field. Now-a-days careful hybridising is the practice with most seed raisers; good results have already been obtained, but it may be after all with the Auricula as with the Rose, chance seedlings will still hold the palm. Mr. Douglas's account of seedlings raised in recent years in last week's Journal was very interesting. I think, perhaps, he has been rather hard on the older varieties, as many others besides those named by him will, I hope, remain in our lists and collections and last my time at least. There is, however, one thing to be remembered, that seedlings do not always retain their character, and develope in after years some defect which was not conspicuous in their youthful days.

With regard to the seedlings exhibited the other day there can be no question, I imagine, that the variety named Bessie Potts, raised by Mr. W. Bolton of Warrington, and exhibited in Mr. Horner's stand of twelve, was the "topper" of the Show, indeed it gained the premier prize as the best Auricula in the Show. It is a very beautiful green-edged variety, the edge very bright, the eye bright and lively, the body colour good and not too heavy, and altogether a very bright and pleasing flower. Monarch (Horner) was also a very fine green-edge, somewhat larger than the preceding, but not so refined, with a somewhat duller eye. Mr. Horner's Irreproachable (grey edge), a bold and taking flower. There were several selfs exhibited, and I noticed what seems to an old fashioned grower to be an innovation—selfs with two colours or shaded. Such for instance is Laura (Horner) where there are two distinct shades of colour, whether permanently so or not I do not know, but I do not like it, it is bringing the self Auricula much too near to the white ground Alpines. Mr. Horner had a very beautiful self in Constance, of a crimson maroon shade, good form and substance, and Mr. Bolton had a very beautiful maroon self, called Mrs. James Tinsley. Of older varieties Heroine (Horner) still holds its supremacy, and whenever a good plant of it is exhibited there is very little chance of any other variety beating it.

Such is my estimate (right or wrong I must leave to others to decide) of the Exhibition of last week. I must again ask those who read these notes to bear in mind that I was brought up in a very rigid school of critics, that in my day a truss of ten or twelve pips was not considered a desideratum, seven pips in the opinion of the older florists making a perfect truss, and that coarseness was considered a fatal defect. I am not one of those who think there is no progress, and who are for ever praising the "good old times." Many of the varieties which used to hold the foremost place have passed out of cultivation. We had then no George Lightbody, Richard Headly, Acme, Pizarro, Smiling Beauty, &c., and perhaps the time may come when those we so highly prize now will give way to better kinds. The younger men who are going in for seedling raising have, I hope, a "good time" before them, and I wish them every success.

It remains but to say that the South was well supported on this occasion, and that for the first time in its existence the President of the Royal Horticultural Society presided at the luncheon. Let us hope for a better season in 1889, when the labours of all engaged in working the Society may have a more satisfactory result.—D., *Deal*.

CABBAGES CLUBBING.

I DO not think anyone could be more troubled with Cabbages clubbing than we were at one time, but of recent years it has been unknown in this garden. We have had to pull up ninety out of a hundred plants in a row. There is no mistaking the disease. The plants become yellow and wither in the leaves. When drawn up a little swelling is noticed on the stem amongst the roots, or close to them, and if this is opened with the thumb nail, or cut in two with a knife, a white maggot is found inside. It is this that does the mischief, and it must be treated like any other grub. Gardens in which Carrots, Onions, and Parsley suffer from grubs are always liable to foster Cabbage clubbing.

Lime and soot are our only cure for clubbing. At one time our Onions, Carrots, and Parsley were so uncertain that I resolved to exter

minate their enemies, and to do this a dressing of lime was given to the whole garden. The year afterwards some of the worst quarters were sprinkled with gas lime before being dug. Soot was applied to the crops while growing, and since that time I have not known one of our Cabbages to club, and we grow some thousands annually.—J. MUIR, *Margam.*

Notes & Gleanings

EVENTS OF THE WEEK.—On Tuesday next the Royal Horticultural Society's Fruit and Floral Committees will meet in the Drill Hall, James Street, Victoria Street, when Orchids, Narcissi, and Asparagus are announced to be the leading features. On Saturday, the 12th inst., the summer Show will be held at the Crystal Palace, Sydenham. Several sales of Orchids are also announced for the present and following weeks.

—— AN EXHIBITION IN THE TEMPLE GARDENS.—The Royal Horticultural Society will hold an exhibition, under the patronage of the Lord Mayor, in the gardens of the Inner Temple, London (by the kind permission of the Treasurer and Masters of the Bench) on May 17th and 18th next, and schedules have just been issued giving the following particulars. Twenty-four classes are provided for groups of miscellaneous plants, Orchids, Roses, Azaleas, Pelargoniums, Clematises, Palms, fine-foliage plants, Ferns, hardy plants, Calceolarias, &c., a sum of £100 having been voted by the Council to be allotted by the Judges to the various classes according to merit on the day of the Show. Exhibitors must give notice of their intention to exhibit to Mr. A. F. Barron, R.H.S. Garden, Chiswick, not later than May 12th. On the morning of the Show exhibits will be received up to 9 A.M., when the gate will be closed, and all staging must be completed by 10.30 A.M. The Exhibition will be closed at 7 P.M. Schedules and all information can be obtained from the Secretary, the Society's offices, 111, Victoria Street, S.W.

—— GARDENERS' ORPHAN FUND.—A meeting of the Committee was held last Friday, Mr. G. Deal in the chair. It was announced that applications had been received from ten candidates for the six elections that are to take place at the first annual meeting on July 13th, in the "Cannon Street Hotel." At the dinner, which is to be held in the Hotel on the evening of the same day, it is hoped 500 gardeners and friends will attend, as it is desired to make the first gathering as great a success as possible. The chair will be taken at 5 P.M. by Sir Julian Goldsmid, Bart, M.P.

—— THE centenary of the LINNEAN SOCIETY occurring this year, a special celebration will take place in connection with the annual meeting on Thursday, May 24th. The occasion will be marked by two particularly interesting features—the presentation of the Linnean gold medal to Sir Joseph Hooker, K.C.S.I., formerly President of the Royal Society and Director of Kew Gardens, and to Sir Richard Owen, K.C.B., so long Superintendent of the Natural History department of the British Museum; and the delivery of eulogies on Linnæus by Professor Fries, the present occupant of the chair of botany at Upsala.

—— THE WEATHER.—"B. D." writes from Scotland:—"April (30th) is going, weeping gently, presumably for her cold and ungenerous behaviour. She has been unsparing of both smiles and tears, but her breath has been that of winter instead of spring. The last week was cold throughout the first half with high east wind, and the second with equally cold westerly gales. Frost occurred on the nights of the 24th and 25th, the ice being fully one-eighth of an inch thick on shallow water on the morning of Thursday last. Hedges and trees begin to assume a greenish tint, and pasture is improving." In the south the weather has been milder than the previous week, and Monday was quite a summer day, with a slight chilliness in the wind.

—— THE SCOTTISH PRIMULA AND AURICULA SOCIETY announce that their second Show will be held in the Calton Convening Rooms, Waterloo Place, Edinburgh, on Wednesday, May 9th, this year. Show and Alpine Auriculas, Polyanthuses, Primroses, and Primulas have twenty-one classes devoted to them, the prizes ranging from 20s. to 2s. 6d., but in addition, Mr. W. Straton, Annfield, Broughty Ferry, presents a gold medallion as a special prize for six self Show Auriculas. Certificates will also be awarded for seedlings considered sufficiently meritorious. The Hon. Secretary and Treasurer is Mr. W. Straton, and the Assistant Hon. Sec., Mr. J. Grieve, Pilrig Nursery, Edinburgh.

—— AURICULAS AT SHEFFIELD.—We are informed that in consequence of the prolonged cold and consequent lateness of the season Mr. B. Simonite's Auriculas will not be in bloom before the second week of the present month.

—— A RE-ISSUE of Mr. W. Paul's cheap popular book on ROSES AND ROSE CULTURE (Kent & Co., 32, Paternoster Row) is just to hand, and comprises within its ninety-two pages much interesting and useful matter for amateur rosarians. A chapter on new Roses is included, selections of Roses for particular purposes, and a list of varieties reared or introduced by English Rose growers.

—— MR. JOHN CROOK, gardener to Mrs. Sherwin, Farnborough Grange Gardens, Hants, writes as follows in reference to the SEEDLING PRIMULAS shown at the last meeting of the Royal Horticultural Society:—"Thanks for your notice of Primula under certificated plants. Three of the six plants shown were seedlings, obtained by crossing P. ciliatum with other hardy Primulas. Mr. Douglas thought the reddish crimson one was a break in colour. The object I had in view was to obtain a race of hardy Alpine Primulas with larger and more highly coloured flowers. Many of the existing varieties are unsatisfactory growers with small flowers. The seedlings are quite hardy, strong in habit, and free flowering."

—— AN ESSAY read some time ago before the members of the Nottinghamshire Horticultural Society by Mr. Chas. E. Pearson of Chilwell, entitled THE PELARGONIUM AND ITS CULTIVATION, was subsequently issued in pamphlet form, and has now reached its second edition. It comprises in eleven pages cultural information respecting Zonal, Show and Ivy-leaf Pelargoniums, including details on summer and winter culture, diseases, insects, raising new varieties, potting soils, stimulants, aspect for houses, &c. It is brief and practical.

—— MESSRS. J. LAING & SONS, Forest Hill, S.E., have at the present time a large display of CALADIUMS, which is one of the specialties in the well known Tuberous Begonia nurseries.

—— GARDENING APPOINTMENT.—Mr. Archibald Baxter, for nearly five and a half years general foreman at Wentworth House, Rotherham, has been appointed to succeed the late Mr. Tindall as head gardener at Sprotborough Hall, Yorkshire.

—— WE are requested to state that offices have been opened in London, at Cornwall Buildings, 35, Queen Victoria Street, E.C., for the AUSTRALIAN IRRIGATION COLONIES, which are now being carried out on the River Murray, under special Acts of the Parliaments, and regulation by the Governments of Victoria and South Australia, by Messrs. Chaffy Bros. (Limited) late of Ontario, Southern California. The work is intended to remove a chief obstacle to the development of colonisation on the Australian continent—namely, the frequently recurring and disastrous droughts.

—— SCHEDULES OF SHOWS.—The schedules of Exhibitions to be held during the present year are accumulating, and the following are to hand this week. The Winchester Horticultural Society will hold their fifth Rose and Flower Show in the Guildhall of that city on Thursday, July 12th, and a Chrysanthemum Show in the same building on Tuesday and Wednesday, November 13th and 14th. The Wimbledon Royal Horticultural Society announce their summer Show to be held in the grounds of Wimbledon College on Wednesday, July 4th, and the autumn Show on Thursday, November 15th, in the Drill Hall, Wimbledon. The South Essex Horticultural Society will hold their next Exhibition in the grounds at Knotts Green, on Thursday, June 14th. Chrysanthemum Shows will take place at Barnsley on Thursday and Friday, November 15th and 16th, and at Brighton on Tuesday and Wednesday, November 13th and 14th. We do not remark any special alterations or additions to these schedules for the current year.

—— ACCORDING to a paper in the *Board of Trade Journal* for April, the production of attar of Roses constitutes one of the most important branches of native industry in Bulgaria. The valley of Kezanlyk, known as the VALE of ROSES, is the centre of this production, which extends as far as Carlovo, and the villages which lie sheltered from the north wind by the vast chain of the Great Balkans. In 1885, and no later statistics have been published, the manufacture of attar of Roses in the district indicated amounted to a value of 1,100,000 francs.

—— A NEW HOLLY.—We are informed that at the sale of the Lawson Nursery Stock at Bangholm, Edinburgh, last week, the new Golden Variegated Hodgins Holly, which originated in the Bangholm Nursery, Edinburgh, consisting of twenty-four plants, was sold to Messrs. Little & Ballantyne, Carlisle, this being the entire stock. Assuming the variegation is clear and constant, and the plant inherits the free growth of the type, this "Golden Hodgins" should be an acquisition.

—— MESSRS. OAKSHOTT AND MILLARD request our opinion on samples of CINERARIAS that have been presented for examination. One of the blooms exceeds 3 inches in diameter, and though the others do not quite equal it in size, they are good in form, substance, and coloration. We have not yet received a bloom exceeding in size the one sent by Mr. R. Owen that was referred to on page 352 last week, and when we do the circumstanee shall be recorded.

—— A BERKSHIRE correspondent appeals for information as follows:—"Can any of your contributors inform me if either of the LAWN EDGING CUTTERS in the market give really satisfactory results? Some few years since I tried one of them, but from the impossibility of varying the depth of the cut to suit the depth of edge it turned out a failure with us. I should be very glad to learn that this difficulty has been surmounted, as we have something like a third of a mile of edging to keep in order, and the labour of doing it with the shears is a great tax on the gardener."

—— WE are informed that Messrs. Shirley Hibberd and H. Herbst have been added to the Committee of Management of the Chiswick Gardens.

A PROPAGATING PAN.

AT the last meeting of the Royal Horticultural Society, Messrs. Thos. Pascall & Sons, South Norwood Pottery, S.E., exhibited samples of

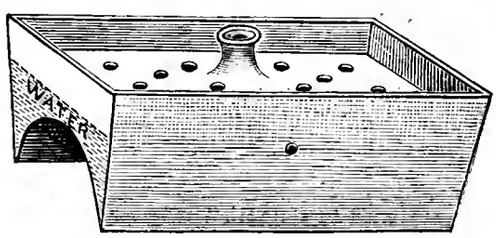


Fig. 47.

a new propagating pan, and the Floral Committee recommended that it be sent to Chiswick for trial. It is very simple, as the accompanying cut (fig. 46) indicates, and is likely to be found useful by amateurs and others who have few conveniences for propagating plants. The trough is hollowed on the under surface, so that it fits evenly on hot-water pipes. The lower part is filled with water, and upon two small ridges at the side a perforated tile rests, the soil in which the cuttings are to be inserted being placed on this. The top can be covered with a piece of glass, and most softwooded plants, like Alternantheras, strike readily. The troughs are 14 inches long, 6½ inches wide, 6 inches deep, and the bottom is made to fit a 4-inch hot-water pipe.

GLADIOLI NOTES.

WITH regard to "A Northern Amateur's" destructive criticism of what you were good enough to publish at p. 319 I do not think a better reply could be found than is furnished by the notes from Mr. Murphy, which precede those of your correspondent. That gentleman "cannot justly complain of disease, exhaustion, or degeneration," and then follows "one of the great agencies which command success." "The corms must be ripened or failure will result." When, may I ask, was the culture of the Gladiolus at its lowest? Was it during the hot summers between 1867 and 1876? During that period we know that the Gladiolus was established as a florists' flower, and nothing was then heard of any difficulty in keeping it. But by the time the disastrous seasons of 1879, 1880, and 1881 had passed the hope of keeping stock of the Gladiolus had been so lessened that "D., *Deal*," myself, and perhaps others, had simply to advise the purchasing of stock every season. Last year we entered on, let us hope, another series of hot summers, when the difficulty of ripening the corms will be overcome. For my own part, I can only repeat that want of maturation and not disease has been the difficulty I have had to contend with. A few points of your correspondent's letter I may be allowed to reply to. First as to French corms being badly diseased. For the past few years I have had my stock from Messrs. Stuart & Mein of Kelso. These are imported directly from France, and I cannot say I have found a diseased corm among any of their parcels. Curiously enough this firm, though growing sometimes not more than seventy corms, is peculiarly successful when exhibiting. I believe they have beaten both Messrs. Kelway & Son, who grow twenty acres, and Mr. Campbell of Gourock, who has no difficulty in staging 150 spikes at one show after another.

Secondly, I do not know why some sorts do not succeed here any more than I do not know why certain Pansies and Carnations and Picotees do not. However, the fact remains.

Thirdly, I certainly grow Gladiolus primarily as decorative plants. Some of the varieties I favour are so beautiful as regards colouring that I must say I have little sympathy with anyone who would neglect them on account of a lack of size or shape of flower or length of spike. The men who measure the beauty of the Gladiolus by inches and feet are few.

Fourthly, Your correspondent is entirely in the wrong in assuming that the plant which I referred to as producing seventy-eight single flowers did not do so from one single growth. Moreover, it was from the half of a cut-up corm, its twin being very little behind in number of blooms. The rest of your correspondent's note hardly calls for remark.—B.

AT last, April 23rd, I have finished planting my small stock, not above 500 roots, and during all my long experience of the plant I have never been so late. The very unfavourable state of the weather, and consequently of the ground, hindered me for some time, and then a sharp attack which laid me by for a week hindered me, and it was only by snatching bits of times that I was enabled to get it done. I cannot say that I look very hopefully to my bloom this year owing to this. I do not so much mind the lateness of the season as the unkindliness of the ground.

I am, as your correspondent calls me, an "old time" correspondent; but perhaps he means that I am so wedded to theories that I cannot give them up when I see good reason for so doing, if my consistency is delicious to him, his splendid begging of the question is beyond all praise. When I have maintained that the Gladiolus is subject to a disease which is often fatal, and is more so in some seasons than in others, I am not stating a mere theory. Years ago I submitted corms to that most distinguished vegetable physiologist, the Rev. M. Berkeley, and he distinctly stated it was a disease similar to that which attacked the corms in Holland. Some years later I submitted corms to Mr. Worthington Smith, who carefully examined them, and published in the *Gardeners' Chronicle* engravings of dissections he made of the roots, and clearly established that it was a disease, and so I have seen no reason to alter my opinion. This year, as I have stated, amongst some corms that I reared in a frame were some so "evil" that I could not plant them. I sent two up to an authority, and the verdict is the same, bad examples of the Gladiolus disease. Happy are those growers who know nothing of it. I have often heard the same cry from other growers, but after a time somehow or other they lose their corms, although, as they have determined that there is no disease, some other reason must be found for it. As I have said, however, the prices of Gladioli are now so much lowered, and the very best varieties can be obtained at so moderate a cost, that the losses by disease or any other cause can be readily supplied.

There is, of course, a greater difficulty in harvesting the late-flowering varieties, such as Duchess of Edinburgh and Phœbus, but when your correspondent says anyone who knows the former of these two varieties "will see the impossibility of growing it a second year," there is a complete begging of the question. So far from that being the case, the corms which I planted this year were at least four years old, and each of them when harvested measured 10 inches round, and were in perfectly sound condition. As I have already said, I think that one of the best ways to remedy this defect of ripening in the later blooming sorts is to leave them in the ground longer. They may be left there until the first week of December, and unless it is a very wet autumn no injury arises. I do not think there is much danger of their throwing out fresh roots, a fear I once had myself. I believe that as soon as the new corm is formed on the top of the old one it throws out fleshy roots, and the effect of leaving them in the ground will be simply to make them a little more vigorous, but not to detract from the strength of the corm; but after all, perhaps the best way is not to have much to say to these late blooming varieties. I know none of them that is not equalled in colour and beauty by those which flower at more seasonable times, and I cannot see much use in growing kinds of which it is very doubtful whether you will ever get a bloom, and therefore I think that after this year I shall not attempt to grow any of those contained in division 4 of my list.

There will be always a difference of opinion with regard to varieties, and wonder expressed why some are omitted in any list given, and why

others are included; still, I went very carefully through my list, and had, I think, fairish reasons for omission. Thus, of those mentioned by your correspondent I consider Le Phare and Orphée both too small for the requirements of these days. Dictateur is with me one of the very latest; indeed, it never bloomed properly with me this season, and so I determined not to grow it again. Amitié had utterly failed with me for two years, and so I gave it up, looking upon it as I do Madame Desportes, beyond my power, in this locality at least, of keeping it sound. Eugène Souchet I am again trying, but it has as yet failed to please me; the same I may say of Phidias. Teresta I might include, although I have never grown it but one year. Diamant is much too flimsy to suit my taste. Panorama rarely opens with me a sufficient number of blooms to make a good spike. Sylvie is also thin, and Penelope poor in colour.

It is evident there are some varieties which succeed better in certain localities than in others. Some of those named by your correspondent with which he is unsuccessful do well here, and I remember a first-rate grower in Scotland telling me that he could do nothing with Meyerbeer, with me so easily grown that I have often thought of growing it in clumps like brenchleyensis, and leaving it in the ground to take its chance, and yet the grower could do nothing with it. It is well that all these things should be carefully taken into account before we conclude that there must be want of skill, intelligence, or care because failures take place.—D., *Deal.*

PAVETTA NATALENSIS.

PAVETTAS are not numerous in cultivation, but one, P. borbonica, is a favourite in some choice collections of stove plants, the leaves being beautifully variegated with green and yellow, and having a red midrib. Another less familiar plant is Pavetta caffra, which has heads of white Ixora-like flowers, and near to this comes P. natalensis, which has been recently introduced from Natal by Mr. W. Bull, Chelsea, to whom we are indebted for the illustration (fig. 47). The flowers are pure white in dense semi-globular heads, and the long styles which protrude considerably beyond the mouth of the corollas give the heads a very distinct appearance. The plant will succeed in a cool part of the stove, in an intermediate house, or in a warm conservatory, and requires a good sandy peat as soil, or a small admixture of light turfy loam.

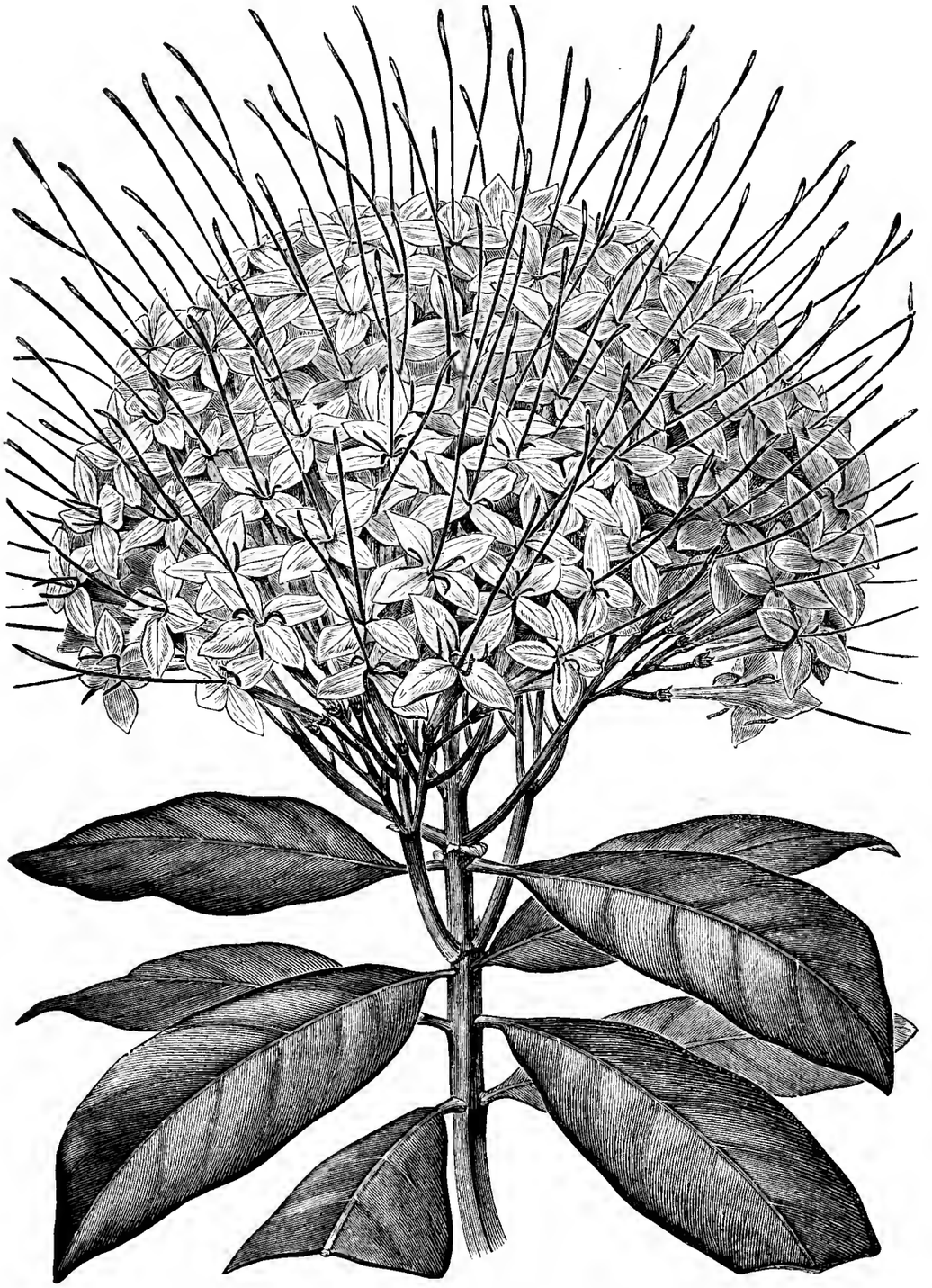


FIG. 47.—PAVETTA NATALENSIS.



ROSE SHOWS IN 1888.

June 26th.—Boston.
,, 28th.—Brockham and Ryde.
,, 30th.—Eltham and Reigate.
July 3rd.—Bagshot, Canterbury, Diss, and Hereford.
,, 4th.—Croydon, Farnham, Hitchin, and Richmond.
,, 5th.—Bath, Farningham, and Norwich.
,, 6th.—Sutton.
,, 7th.—Crystal Palace (National Rose Society).
,, 10th.—Gloucester, Ipswich and Oxford.
,, 11th.—Ealing and Tunbridge Wells.
,, 12th.—Birmingham, Carlton-in-Worksop, and Winchester.
,, 14th.—New Brighton.
,, 16th.—Newcastle-under-Lyne.
,, 17th.—Leek and Ulverstone.
,, 18th.—Birkenhead.
,, 19th.—Helensburgh.
,, 20th.—Darlington (National Rose Society).
,, 21st.—Manchester.
,, 24th.—Tibshelf.

In the above list the only exhibitions not held by the National Rose Society, or by Societies in affiliation with it, are those at Birmingham, Boston, Carlton-in-Worksop, Manchester, Newcastle-under-Lyne, and Richmond. In the case of Birmingham and Boston, where the shows extend over two days, the date of the first day's exhibition only is given.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

ROSES FROM CUTTINGS.

THAT Roses from cuttings succeed admirably admits of no doubt whatever. A goodly number of plants can soon be raised by propagating them at the various times when cuttings are most easily obtained. One of the periods when a sure strike can be depended upon is the present, as after the forced plants have flowered and the wood has become partly ripened, two cuttings can be taken from each well grown shoot without injuring the plant. Shoots cut so that two joints are above and one joint below the soil when inserted are all that are necessary. Cut the bottom leaf off the cuttings, place about five cutting in one 3½-inch pot-pressing the soil firmly, which should be composed of two parts loam to one of leaf soil, with a free admixture of sharp sand, placing some of the latter on the surface to be carried down to the bottom of the hole made to receive the cutting with a dibber, as roots are more quickly formed in sand than soil. If the soil in the pots is watered previous to the insertion of the cuttings the work can be done much more firmly and the cuttings stand a much better chance of striking than when they are inserted in loose dry soil. In either case water should be given to settle all firmly down. Place the pots in a gentle bottom heat in either a hotbed or propagating frame, where the cutting can be kept close with the exception of the admission of the air occasionally to evaporate condensed moisture. Upon no account should the foliage be allowed to flag, therefore shade when necessary, and occasionally sprinkle the leaves with water. Roots will quickly form, when the plants must be removed to a warm house for a time, giving them a position near to the glass to prevent their being drawn during the growth. Place them singly into small pots, using a similar kind of soil, returning them to their former quarters until established, when the plants should be gradually hardened, and either placed out into their permanent positions or be kept in pots for the remainder of the season. If the latter intention is to be adopted a shift into pots 4½ inches diameter will be an advantage, using soil with more loam and some partly decayed manure, plunging the pots in ashes for the remainder of the year.—S.

CLIMBING ROSES.

"THAT variety is a point of primary importance in garden scenery will hardly be disputed, and in the Climbing Rose we have a distinct and interesting object. What can be more picturesque than an Ayrshire or Evergreen Rose, scrambling up the stem of some old tree, which is probably bare of branches on the lower 10 feet or 12 feet of the trunk, although its lofty head is a fine feature on the outskirts of a lawn or shrubbery? Deftly and rapidly these Roses wind around the rugged trunk, pushing upwards till they reach the branches above, among which they entwine themselves, the clusters of flowers drooping gracefully, intermingling with leaves and branches, and moderating the glare of the skyey openings.

"Yon old wall or oak paling, solid as a fence, is not altogether sightly; the inroads of time have set a mark upon the surface; in the wall a soft brick is crumbling in decay, on the fence are thick patches of mosses and lichens. We would not in many cases entirely hide these fences, but there is too much of them exposed to view. We would break the continuous blank lines and spaces, and what more suitable for the purpose than Climbing Roses?

"Again, the arches at the crossing of walks may be appropriately clothed with these facile plants, and they are equally well adapted for trailing over arcades, arbours, and rustic temples.

"For the above purposes the Ayrshire, Evergreen, and Multiflora Roses are the best. They grow vigorously when well fed, often making shoots 10 feet or 12 feet long in one season. They are very hardy, and when fairly established flower most abundantly. For low fences the Hybrid China, Hybrid Bourbon, and the strongest-growing Hybrid Perpetuals may be used; and if a wall with a south, east, or west aspect is bare and unsightly, whether high or low, some few of the Noisette and Tea-scented are the best kinds that can be planted against it.

"When planting against fences, whether walls or palings, it is well to nail the principal shoots to the fence immediately after pruning. Where subject to strong winds, and if the growth has been very vigorous during summer, it may be well to stick in a nail here and there during and after the season of flowering. For this purpose nails and shreds should always lie ready at hand. The Banksian Rose, which is one of the most interesting and beautiful of Climbing Roses, requires special treatment. It is common to hear it said, 'This Rose grows freely enough, but seldom flowers well.' Now, this is usually due to the system of pruning. Very little pruning is necessary here. The gross shoots, if any, should be pinched or stopped in the growing season, and the thin, weak, wiry shoots should be removed early in the spring. The aim should be to obtain and preserve a goodly number of moderate-sized well-ripened shoots, and these should be pruned sparingly, for it is such, and such only, which produce flowers."—WILLIAM PAUL (in *Roses and Rose Culture*).

ROYAL HORTICULTURAL SOCIETY.

APRIL 24TH.

SCIENTIFIC COMMITTEE.—Present: Dr. M. T. Masters, in the chair; Messrs. Michael, O'Brien, Pascoe, Burbidge, Dr. Scott, Professor Church, and Rev. G. Henslow (Hon. Sec.).

Daffodil, Fringed.—Mr. Burbidge gave the following further particulars about the remarkable form described at the last meeting. He said that there existed but a single clump in the lawn of Rev. Mr. Gabbett, Croom Rectory, by Limerick. The flowers had come true for several years. It was associated with N. spurius and N. Telemonius (plenus), the former seeding itself. It appears to be a sport from N. spurius, but nothing certain is known of its actual origin.

Hyacinths, Self-Mutilation of.—Specimens of this not uncommon phenomenon were sent from Colonel Urquhart, of Rosebay, Broughty Ferry, for information as to the cause. The spikes have the appearance of being pinched off when first emerging from the bulb. The cause is apparently twofold; on the one hand, the bud-scales at the top are too rigid, while on the other the spike was well nourished, the result being that the insufficient expansion of the scales checked the development of the spike at the place where it becomes decapitated. The probable explanation was the exceedingly fine season of 1887, the "ripening off" bringing about the rigidity of the bulb scales, at the same time favouring the formation of the spike within. Mr. Burbidge observed that it is a noticeable fact that the Chinese gash their bulbs with three slits at the top, to allow of the free escape of the spike, and to prevent such constrictions.

Hazel Catkins, Proliferous.—On a further examination of the Hazel brought to the last meeting by Dr. Masters from Mr. Syme, Mr. Henslow observed that, besides bearing female catkins at the base of the male, the latter were proliferous, the basal branches being covered with staminate flowers resembling the so-called "Egyptian Wheat," a variety of Rivett's, on which several of the spikelets grow out into ears; so that five or more may proceed from one stalk. These two peculiarities—the proliferous state of the male catkins and the presence of female ones—corroborated the conclusion arrived at by Mr. Meehan of Philadelphia, who observed in various declinous trees, that the female flowers were always associated with a relatively greater degree of vigour; or conversely, that an increased vigour produced female flowers, when normally nothing but male would have appeared.

Eucalyptus, Hardiness of.—Dr. Masters received a communication from M. Naudin, in which he speaks of the hardiness of E. urnigera at Brest and elsewhere, where it is subject to occasional severe frosts. He says that E. coccifera will compare favourably with it, as also E. viminalis (falsely called E. amygdalina) which is nearly as hardy. The last severe winter has shown the different degrees of hardiness among the various species of Eucalyptus. He says that a considerable number, even of very young trees, were absolutely insensible to the frost, while others, much larger and older, have had their foliage scant or less damaged. Even E. globulus, usually so hardy, has had some of its leaves frozen, principally through the melting of the snow by the sun's heat. Mr. Burbidge remarked on the general presence of bloom or wax on the young leaves, and its absence on the older—probably a provision against too great transpiration in the young state. Mr. Henslow offered a similar interpretation of the scimitar-form of the older leaves to that of the obliquity of Pears and Fir cones. When the stalk stands at an angle with the vertical, the weight of the leaf acting vertically downwards, the tension being along the stalk, the leaf consequently grows much more on the outer side to meet the strain of the resultant of these two forces—the vertical position, as of that of the stipules of Acacia, being probably adaptations to avoid too great radiation in the dry climate of Australia.

Plants Exhibited.—Anemone Fanninii, from South Africa, a large plant, with lobed orbicular hairy leaves and large greenish-white flowers. Befaria glauca, from Colombia, and called the Andean Rhododendron; the flowers are pink, nearly regular, with seven petals and fourteen

stamens. It is the representative in the southern of the Rhododendron of the northern hemisphere. These two were received from Kew, and botanical certificates unanimously awarded to them.

☐ *Plants Sent for Name.* — Epidendrum tridactylum, with small greenish flowers, of no beauty; Pleurothallis insignis, with slender pale grey lobes to the perianth; Pinguicula grandiflora, and the pink variety from the Alps of Dauphiné, above Grenoble; Nymphæa tuberosa var. flavescens. A protest was made against the name "Marliacea," furnished with the specimen, as tending to establish a confusion with the true name as given above.



CHRYSANTHEMUM SHOWS.

We have received notices of the following fixtures for the Shows of 1888:—

National Chrysanthemum Society, Metropolitan Shows, September 12th and 13th; November 7th and 8th; and January 9th and 10th, 1889.
Provincial Show at Sheffield, November 16th and 17th.
Kingston-on-Thames, November 6th and 7th.
Portsmouth, November 7th, 8th, and 9th.
Teddington, November 8th and 9th.
Crystal Palace, November 9th and 10th.
Ascot, November 13th.
Southend, November 13th.
Devizes, November 13th.
Brighton, November 13th and 14th.
Cardiff, November 13th and 14th.
Putney, November 13th and 14th.
Winchester, November 13th and 14th.
Barton-in-Humber, November 14th.
Bournemouth, November 14th.
York, November 14th, 15th and 16th.
Market Harborough, November 14th and 15th.
Brixton, November 15th.
Reading, November 15th.
Pembroke, November 15th.
Lindfield (Sussex), November 15th and 16th.
Sheffield and West Riding, November 16th and 17th.
Liverpool, November 20th and 21st.
Rugby, November 21st and 22nd.
Birmingham, November 21st and 22nd.
Hull, November 22nd and 23rd.
Pontefract, November 23rd.
Bolton, November 23rd and 24th.

CHRYSANTHEMUMS IN APRIL.

The very interesting letter on this subject from Mr. W. Holmes, Hon. Sec. N.C.S., detailing the success achieved by Mr. Kipling in producing Chrysanthemum flower the whole year round, will I hope bring out for the benefit of Journal readers the experience of other growers who may have experimented in a like direction. I therefore give an instance from my own practice in support of the possibility of such being done. In July, 1886, I planted out on some good rich land in our kitchen garden a number of late struck plants of Madame C. Desgrange and La Vierge. These grew rapidly and luxuriantly, producing very large and fine foliage, with plenty of flower buds, but as we had a wet and cold autumn they all failed to open. I, however, had the plants potted, and they were kept in frames and cold houses through the winter. They retained their foliage very well, and in March, 1887, the flower buds, formed the previous October, and which had been dormant through the winter, commenced to expand, and in most cases developed large and fine blooms. I exhibited good flowers cut from them at our Sheffield Society's meeting in May, 1887, and they continued producing useful flowers until July.

JAPANESE REFLEXED CHRYSANTHEMUMS.

I was very much interested in the letter from Mr. Orchard under the above heading in last week's Journal. I think the reasons therein given, why the introduction of sub-sections in the large Japanese class, are very good and pointed. It is undoubtedly true that, owing to the large number of new varieties now being annually introduced, and the anxiety of exhibitors to grow only such varieties as will produce large flowers, a great number of beautiful but smaller varieties would soon be lost to cultivation, unless some such plan as suggested by Mr. Orchard be adopted. I hope his suggestions will meet with general approval from Chrysanthemum growers, and the N.C.S. Catalogue Committee in particular.—W. K. W.

It is said on page 348, "The varieties named as Japanese reflexed are only excluded from the true reflexed class." I do not remember (with one exception, Amy Furze) the sorts named being staged in the true reflexed class. My impression is that a class should be made for Japanese reflexed varieties with a view to preserve those that stood a very great chance of being elbowed out of existence altogether by the increasing rage for size in the blooms as now staged in the Japanese classes, and that the varieties named as Japanese reflexed should not be shown in any other class but the one provided for them. I think the duties of judges will be increased by the present arrangement. If blooms of Triomphe du Nord are placed with Val d'Andorre, the former being probably 5 inches in diameter, of proportionate depth for the variety, while the latter will most likely be 8 inches across, both good blooms of their respective variety, but the smaller sort cannot be counted as valuable in a stand as the larger.—A Yorkshireman.

VEGETABLES FOR EXHIBITION.

TURNIPS.

If these are wanted for an early show, or say in June or July, the seed should be sown on an east border, and this site, or any cool fruit quarter where the bushes or trees do not yet cover the whole of the ground, is suitable for successional sowings. In very hot dry weather we find a wide north border is a still better position for Turnips, these doing well with us even in such a hot and dry summer as we passed through last year. They grow quickly, and are of better form and clearer skinned when sown on fairly rich yet firm ground. We alternate them with Leeks on two east borders, and as a liberal dressing of manure is applied to the ground the season it is cropped with Leeks none is required for Turnips. Early Milan is of extra quick growth, being sometimes available in six weeks from the time of sowing, and as this useful variety forms but little top the rows may be 15 inches apart, and the plants finally thinned to about 8 inches apart in the row. To succeed that I can recommend Snowball, this perhaps being the best for the summer shows. Veitch's Red Globe is suitable for the later crops, but though a really good Turnip I should always prefer to stage a good dish of the White Snowball. These two varieties ought to be sown in drills 15 inches apart, and a space of 9 inches from plant to plant be allowed. Seeing that Turnips are not improved in either quality or appearance if left on the ground long before they are shown, it is advisable to make more than one sowing in order to be certain of having fresh clean roots for any particular occasion. The first sowing should be made eight or nine weeks before the Turnips are wanted, and in order to encourage the desirable rapid growth it is a good plan to sow in the drills with the seed either a little guano, soot, or some kind of artificial manure. Plenty of soot and lime dusted over the plants and between the rows will act as a fertiliser, and also a preventive of flea, slugs, and other enemies. The flat hoe should also be freely used between the rows, and the thinning should be done before the plants overgrow each other. All this tends to encourage rapid growth, and good space being allowed the development will be equally as satisfactory. The handsomest roots are usually those that form the smallest tops.

RUNNER BEANS.

Much that has been advanced as to the preparation of the ground for Peas is also applicable in the case of Runner Beans. Dryness at the roots, overcropping, and crowding in the rows are the most frequent causes of failure, and must be guarded against if pods fit for exhibition are desired. A rather cool position should be assigned them; the rows ought to be a good distance apart, or not less than 6 feet, and between these may be grown two or three rows of either Potatoes or Cabbages, these coming off the ground before the Beans are far advanced. I prefer to sow thinly in a single drill drawn about 2 inches deep, eventually thinning the plants to 12 inches apart. One strong stake about 8 feet high or less to be placed to each plant; these, to prevent destruction by winds, being laced together near the top with a single and continuous line of stakes securely fastened with tar twine, the plants to be duly secured to the stakes and stopped when the top of the stakes is reached; then if kept well supplied with moisture at the roots, liquid manure also being occasionally given, plenty of pods will set in the hottest weather, these to be freely thinned, and only the best shaped of them reserved. It is advisable to make two sowings—the first early in May, and the other one month later, this being more often necessary when the pods are needed in August. If one row only is depended upon for giving a long succession of straight brittle pods, in addition to stopping and liberal treatment at the roots, all the earliest pods ought to be kept closely gathered, and on no account should any be left to perfect seed. A fortnight may sometimes be gained by raising the plants in pots or boxes under glass, transferring them to the trenches late in May, and protecting them from spring frosts. This is also the surest way of germinating the seed and saving the plants of any extra choice variety. All should be freely mulched with strawy manure, or some substitute, early in the summer.

At one time Carter's Champion was the most popular for exhi-

bition purposes, but this is now perhaps superseded by Laxton's Girtford Giant and The Czar, the latter being white-seeded ; Veitch's Mammoth Scarlet and Carter's Jubilee, all of which can be made produce very fine pods. Ne Plus Ultra, however, surpasses all of them, and if it can be obtained true to name will delight the grower, as it produces long, broad, and straight pods, beautifully green in colour, or such as judges are bound to take note of. —EXHIBITOR.



KITCHEN GARDEN.

MAIN CROP CARROTS.—These should now be sown. They are an important crop, as they keep up the supply of roots all the winter and until the young Carrots come again. We have still many of our main crop Carrots of 1887 in store, and when they are grown and stored to last until now or later they give much satisfaction in the kitchen. All who have professional cooks to supply would do well to note this. The Intermediate is the best variety for the main crop. The long ones do not suit the majority of soils, but the intermediate is shorter, very thick, and of first-rate quality. Any soil a foot in depth will grow it well. We never fail to take the precaution to fork a little lime or plenty of soot into our soil before sowing Carrot seed. This invariably prevents the roots being injured by grubs. The rows should be from 15 inches to 18 inches apart, and the drills 2 inches deep. Sow good seed thinly, spread over the drills, then rake the surface, and finally give the whole a firm rolling.

KIDNEY BEANS IN THE OPEN.—We regard Kidney Beans as the most tender of all vegetables. If the seed is sown too early it will perish without germinating. If it germinates and the young plants are caught by the slightest frost the leaves will be blackened, and the plants, if not killed, severely injured. It is this that makes us delay sowing Kidney Bean seed until the last week in April. It is, however, safe to sow now, and a few rows of Dwarfs and one row of Runners may be put in as a first crop. The Dwarfs, especially Cooling's Ne Plus Ultra, fruit some weeks earlier than the Runners, and as it is very desirable to have Kidney Beans as early as possible a few Dwarfs should always be sown. They must have the most sheltered and sunny position in the garden. Along the bottom of a south wall is a good place for the first row. A south border is also well adapted for them. The soil must be rather rich and not too heavy. Sow the seed 3 inches deep and not too close. Where the Dwarfs are grown there will be no particular hurry in getting the Runners into fruit. They may therefore be sown in any ordinary quarter of the garden. Make a trench about 15 inches deep, place some good manure at the bottom, fork it well into the soil, sow the seed on this, and cover with 3 inches of soil. The young plants will have a little shelter at first in the trench, and as the hot dry weather comes on they will not suffer so much as if sown on the level. Laxton's White Czar is one of the best Runner Beans.

BEETROOT.—The whole may be sown at once. The Turnip-rooted variety gains a suitable size sooner than the long varieties, and a few short rows of this may be sown for early use. Dell's Crimson is the best of the long-rooted varieties. It does not grow too large, and the tops are very compact. We have often grown quantities of culinary roots of this variety in the flower beds, but there is no difficulty in growing Beet in any garden. The Turnip-rooted may be grown in the shallowest soils. The others will do in soil that suits Carrots, Parsnips, or any penetrating roots. Sow thinly in drills 15 inches apart, and see that mice do not destroy the seed.

TOMATOES.—These are gaining favour annually ; amateurs are taking to them, and find them interesting to grow and highly agreeable on the table. They cannot be grown in too many gardens. Plants intended for placing in the open air in May or June should not be kept too long in a bothouse, but place them in a cool frame and induce them to make a sturdy growth. These will go on without receiving a check, and they will fruit early. Some may think that if they can only obtain large plants they will be sure to have early fruits, but mere size does not mean fruitfulness. We have had plants bearing fruit 6 inches from the ground that were more prolific than others 4 feet high. The secret of success is transferring them to the open without giving the slightest check. Early Tomato plants under glass are now fruiting freely. Webb's Sensation is large and fine. There is nothing equals the single stem system for early fruit and plenty of it, indeed it is a good plan at all times, and the side shoots should be constantly removed. Do not allow many of them to form and then cut them all off together. This would ruin any plant, but if removed as they form, the whole strength of the plant will be thrown into the main stem. Plants that have been recently placed out in pits for summer fruiting should be confined to one stem from the first. Avoid supplying much water until they are well rooted, then give plenty, but do not use liquid manure until the fruit is abundant. Early plants in full crop may receive it three times weekly with advantage.

RIDGE CUCUMBERS AND VEGETABLE MARROWS.—Where seeds of these were sown together in a 6-inch pot turn the plants out of the pot when 6 inches or 8 inches high. Break the ball carefully, and remove each plant with as many roots as can be secured, then place them singly in a 3-inch pot. Grow them in a little heat and keep them close until they are advancing freely, when they may have more air and be gradually hardened to plant out about the middle of May. If the plants are large enough now to place out make up a little hotbed, place a mound of soil on the top of it, plant in this, and cover with a hand-glass or some other protector. Seeds may now be sown in mounds of this kind, especially in cases where there are no means of rearing young plants under glass.

FRUIT FORCING.

VINES.—*Early Houses.*—Forcing has had to be carried out almost exclusively by the aid of artificial heat, it being equally as necessary to maintain the day as the night temperature. Red spider has not increased this season as it does in bright and dry weather, for then the atmospheric moisture and water at the roots are not proportionate to the demands of evaporation, but lately, owing to the dull weather, evaporation has not been considerable. Where red spider has obtained a hold prompt measures for its destruction must be adopted. Some resort to the syringe, but this is not to be recommended, as after the Grapes are advanced in colouring the bloom on the berries is liable to be more or less damaged by the water. Sponging the leaves, though a good means of preventing the spread of the pest, and if taken in time effectual, yet is in most cases resorted to so late as to render it but a partial remedy by a tedious operation. The judicious application of sulphur to the hot-water pipes is the most effectual preventive. Flowers of sulphur should be mixed with skim milk, and when the pipes are heated to between 180° and 200° apply the sulphur with a brush and maintain the pipes at the temperature named for about an hour, and then the heat may be allowed to fall to the ordinary degree. A calm evening should be chosen, and the following evening repeat the process. Take care not to overheat the pipes, nor to give an overdose, or the skins of such varieties as Frontignans and Muscats will be seriously affected, especially those but partially ripened. Where fermenting material on outside borders has become cold and heavy a portion should now be removed, but leave sufficient to avoid giving a sudden check. Early Grapes that are ripe will only require enough fire heat to maintain a circulation of dry air, allowing the temperature to fall to 60° at night.

Second Early Houses.—Vines that were started with the new year are now commencing to colour. The inside borders must have due supplies of water or liquid manure in a tepid state, the quantity being such as to thoroughly moisten the border to its depth, and give a mulch of short material, but no great means should as yet be employed to produce a dry condition of the atmosphere, as the Grapes swell considerably in ripening. A good moisture must therefore be maintained in the early stages of colouring, sprinkling the house in the early part of the day, and at closing time provide a little ventilation constantly to induce a change of air and prevent the deposition of moisture on the berries. A warm genial condition of the atmosphere with a circulation of air is essential to ensuring thoroughly swelled berries. Maintain the temperature at 70° to 75° by day from artificial means, and 80° to 85° through the day from sun heat, advancing in the early afternoon to 90° or 95°, falling with the declining sun or light to a night temperature of 60° to 65°, 5° more both day and night being necessary for Muscats. As the fruit advances in colouring the moisture should be gradually reduced and the ventilation increased, but there must not be any diminution of the temperature until the Grapes are thoroughly ripe. Grapes that are liable to crack, such as Madresfield Court, may, when ripening commences, have the needful supplies of water or liquid manure, and then have the inside border mulched with 4 to 6 inches thickness of dry material, which, with early ventilation, insures this remarkably fine Grape arriving at perfection.

Succession Houses.—The remarks as to thinning, disbudding, stopping, and tying given in former calendars still apply ; especially let all superfluous bunches be removed so soon as the number to be left on a Vine is decided. Examine the borders of all succession houses at least once a week, and when dry supply water freely. Inside borders will take almost any quantity of water after the Vines are in full foliage, and with a full crop of Grapes liquid manure should be applied at every alternate watering. Outside borders will not as yet require water.

Late Houses.—Late Vines making rapid progress must be tied out and stopped as soon as they have made sufficient growth to cover the trellis with foliage. The weather has not been without its effect upon the foliage of the Vines, for the leaves are somewhat pale in colour and thin in texture, greatly needing sun to give them a healthy green colour and air to improve their texture. Every advantage, therefore, should be taken of sun heat to increase the ventilation early in the day, but close early, excessive fire heat being injurious.

Newly Planted Vines.—With advancing growth—an evidence that the roots are active—close attention will need to be given to the roots to see that they do not suffer from over-dryness. Allow all the wood to remain that can be exposed to light, but supernumeraries intended for fruiting next year should be confined to one rod or cane, and the laterals pinched at the first joint.

Vines in Greenhouses and Unheated Houses.—The Vines are making rapid progress, and in many instances the growths will require disbudding, stopping, and tying. One shoot is sufficient to each spur

unless they are wide apart, when two may be left, but there must be scrupulous attention to prevent overcrowding; every leaf must have exposure to light and air. Reserve those that show the best bunches, rubbing the others off. Stop two joints beyond the bunch, but rather than crowd the foliage stop at one joint beyond the bunch, or even level with it. Tie down the shoots carefully and gradually. Old Vines sometimes do not bear freely on spurs, being weak. It is best to lay in shoots from the base and along the rods at intervals of 2 to 3 feet, which will increase root-action, the Vines attaining increased vigour, and longer pruning will usually afford better crops of Grapes; indeed, old Vines with fresh canes bear excellently. Apply a light dressing of artificial manure to the border, and point it lightly in. Inside borders may be given tepid water or liquid manure, when dry a thorough soaking, and a mulching of short rather fresh manure will by keeping the surface moist encourage active roots.

MELONS.—*Early Plants.*—Directly the fruit begins ripening lessen the supply of water at the roots, but not so as to distress the plants, for if the foliage has been kept clean and the roots in good condition a second crop of fruit can be had. Atmospheric moisture should be withheld, and a circulation of warm dry air ensured, increasing the temperature to 70° or 75° artificially, and 80° to 90° with sun heat. Cut the fruits before they are very ripe, keeping them in a fruit room for two or three days, or until they are in proper condition to be sent to table. Cracked fruits are produced by a close and moist atmosphere with too much moisture at the roots, which induces an excess of sap. If any fruits show a tendency to crack cut the shoots about halfway through with a knife a few inches below the fruit, and diminish the supply of water at the roots and in the atmosphere, leaving a little ventilation constantly to prevent moisture condensing on the fruit.

Successional Plants.—Continue to fertilise the blossoms when fully expanded, the atmosphere being kept rather drier and warmer, and ventilation attended to early, with a little constantly if there is danger of moisture condensing on the blossoms. Stop the shoots at the time the fertilisation is done one or two joints beyond the fruit. To secure a full crop take care to have a number of fruits on individual plants in the same stage of growth. Earth up the plants with some rather strong loam and rich after the fruits begin to swell, ramming it down firmly, placing a little fresh lime around the collar to prevent canker. Plants swelling their fruits should be syringed freely in hot weather at about 3 P.M., damping the floor several times a day, and in the evening sprinkle available surfaces with liquid manure or guano water, 1 lb. guano to 20 gallons of water. Shade only to prevent flagging; ventilate freely in favourable weather, commencing from 75° to 80°, increasing or decreasing it during the day as may be necessary, maintaining a day temperature of 80° to 85°, or 90° with sun heat, closing between 80° and 85°, and if an advance after closing be made to 90° or 95° it will materially assist the fruit in swelling and lessen the necessity for fire heat at night, but it must be accompanied by plenty of atmospheric moisture. If thrips appear fumigate moderately on two or three consecutive evenings, taking care to have the foliage dry, and for red spider dress the hot-water pipes with flowers of sulphur.

Train out the growths in pits and frames. Still maintain a good bottom heat by linings, and employ thick night coverings as the nights are yet cold. Sow seed for planting in pits and frames as they become cleared of bedding plants, potting the young plants as required.

TOMATOES IN HOUSES AFTER BEDDING PLANTS.—Structures of this kind may be very profitably utilised for Tomatoes. The plants do very well in 10-inch pots, a single plant in each. Drain the pots efficiently, place a layer of rough pieces of turf over the crocks, and then turn out the plant, using turfy loam with about a fourth of well decomposed manure. A considerable space should be left in the pot for fresh additions of soil as the plants advance in growth, and feeding with liquid manure will secure an abundant crop of fine fruit. Train the plants as single cordons to wires 9 inches from the glass, removing all laterals or side shoots, but being careful to preserve a leader. The plants will have fruit from the first show at about every second joint, and the lead should not be stopped until the limit of the trellis is reached, then remove all growth as it appears. Shorten the leaves about a third of their length. The plants may be 12 to 18 inches apart. Keep the house rather close until the plants are established. Ventilate a little at 65°, increase it at 75°, and above that ventilate freely. Close early so as to run up to 80° or 85°, which will enable the grower to dispense with fire heat after the middle of the month.

PLANT HOUSES.

Cyclamens.—The earliest seedlings now well established in 3-inch pots should be transferred at once into 5-inch pots. Be careful not to disturb the roots of the plants much, as if good specimens are needed by early autumn they must be grown without a check. Keep the house close and moist for ten days or a fortnight after potting, until the roots are spreading freely in the new soil, then ventilate daily on all favourable occasions. The object must be to maintain a dwarf sturdy growth. If kept too warm or too close the foliage will be drawn up weakly, and the beauty of the plants will be totally destroyed. Nothing is gained by hurrying these plants, but the reverse; to do them well they must be grown on steadily from the first. The syringe may be freely used on fine days, and the house closed early in the afternoon. Do not attempt to shade the plants, the sun at the present time will do them no harm. Unsatisfactory results may often be traced to overshading, for shade, however light, has a tendency to render the foliage weak. Arrange the plants as near to the glass as possible, but be careful to provide for them a moisture-holding base. It is better to have them a little farther from the glass than to arrange them on dry open trelliswork. Later plants may be placed in 3-inch pots, and those raised from seed sown early in the year in 2-inch pots. Grow the plants on under the same conditions, and do not allow the temperature at night by fire heat to exceed 58° or 60°. Use for a compost good fibry loam, and one-third leaf mould, with one-seventh of manure and sand.

Cinerarias.—The earliest plants should be placed in 4-inch pots, and if they have not been growing under greenhouse treatment gradually harden them until they can be placed in cold frames without being checked. Place later plants now in pans into 2 or 3-inch pots according to their size, and bring them into cool quarters as quickly as possible. Prick out seedlings, and sow a pan or more of seed and let them come forward from the first in cold frames.

Primulas.—The earliest Chinese Primulas may be transferred without delay from 2-inch into 4-inch pots. Remove the small leaves from the collar of the plants and pot them well down, so that the plants can be moved about without fear of their breaking at the collar. The plants root freely from the stem, and are not so subject to damp at the collar as those that have much bare stem above the surface of the soil. Keep these plants in a temperature of 50°, and gradually harden them by the admission of air until they can with safety be grown in a shady position in the greenhouse, or, better still, in cold frames. Place those in pans into 2-inch pots, and prick off those raised from seed sown a few weeks ago. A good pinch of seed may now be sown for yielding plants for flowers at this period next season.

Double Varieties.—Cuttings may be taken and rooted at once; they root freely enough in a temperature of 55° if shaded from the sun, inserted in sandy soil and placed under handlights. The safest method is to remove the large leaves from the old plants, and place light sandy soil about their stems. If placed in an intermediate temperature where the atmosphere is moderately moist they will quickly emit roots. When in this condition they can be taken and potted singly. If kept close for a fortnight afterwards scarcely one will fail to become established.

Primula obconica.—Plants raised from seed sown as soon as it was ripe last season will be ready for placing in 5-inch pots. Grow the plants in cold frames and shade them from bright sunshine. This Primula will do well in the same soil as Chinese varieties. Transplant into pans and boxes the plants raised from seed between two and three months ago.

Primula floribunda.—This is a capital companion plant for the above, and is really charming in the spring with its small but bright yellow flowers. With careful treatment it will seed freely, and by this means a good stock for decorative purposes may soon be raised.

Primula Harbinger.—If this has flowered it should be thoroughly hardened and planted outside in light rich soil in a shady position, or the pots may be plunged in ashes. When kept in pots care must be taken never to allow them to become dry; they should during bright weather be liberally syringed to keep them free from red spider.

THE BEE-KEEPER.

NOTES ON BEES.

PREPARING BEES FOR THE HEATHER.

ALTHOUGH the season proper for bees working only commenced this year with April, yet well managed hives are as forward as they generally are in much milder seasons, and bee-keepers are hoping for a bountiful honey season. To show how to make the most of it is the object of this article, and believing that the plans of bee-keepers are well laid to get the advantage of the early harvests from fruit blossoms, Clover, and Limes, I will skip instructions for these seasons, and give in detail those likely to give the largest harvest from the Heather, which those situated within available distance from it should be prepared to do.

The interest in taking bees to the Heather is increasing yearly, but not to the extent it might. Heather honey, too, is in better demand than other sorts, and in nine cases out of ten better relished—an incentive sufficient to impel bee-keepers even at 100 miles distance from Heather to take full advantage of it with hives that would more than remunerate for the little expense involved in their removal. In the majority of cases bees are sent to the Heather without due regard to their condition, hence the cause of so many failures, hives making little that were expected to become heavy. Prime swarms are most commonly those which

give the best returns, but are as often as not in an unfit state to gather much surplus when the Heather is in bloom. This unfitness may arise through the season being unfavourable during June and July, causing the bees to restrict or wholly suspend breeding by the middle of the latter month. An aged queen will have the same effect. Then owing to these and other untoward circumstances the bees may have dwindled, comparatively speaking, to a mere handful of bees unfit to collect honey enough for their own immediate wants. Through the same or similar causes non-swarmed hives may dwindle down.

No time of the year is so important for the bee-keeper to have his hives properly attended to as the middle of July, whether it be to put them in order for the Heather or, where that is not available, to stand the severest winter's campaign, and come out in spring in a fit state to gather honey from "every opening flower." How to put hives into that satisfactory state, which in a good season means a profitable one, and with the least trouble or expense, I will describe in as concise a manner as possible.

It is to be hoped that no bee-keeper has ignored the advice so often given to have at least as many nuclei with young but fertile queens as the number of stocks he intends to keep. Now, while the queen of any hive is, according to Nature, always desirous to deposit eggs in the cells from December until June, and the bees are as anxious to nurse and bring all these eggs to maturity, even to the risk of losing their own lives through impending want, it is different with them after the day turns. The queen begins to flag, and the bees have a tendency to eat the eggs, and eat or draw out the immature grub, and this, too, even though the hive is rich in honey, but the weather dull and unfavourable, the hive being still further reduced by the bees' propensity to rob, which they almost invariably do on the decline of honey gathering.

At no time during the whole season is feeding so important (except in urgent cases of want) as it is at this juncture, and the bee-keeper should not neglect it. Nuclei having young queens are not so liable to discontinue breeding or draw their brood as hives having done service throughout the year. There seems to be an instinct in them that increase of population is not only desirable but necessary. It is not desirable, however, that young queens intended for the following year should be encouraged to lay excessively. It is better to watch that none of the eggs or brood is destroyed, and encourage the aged queen about to be deposed to lay to the fullest extent by feeding constantly, but in moderation, because the management given at other times is different now. As the breeding goes gradually on in both hives (which applies to any number), transfer the combs containing the most advanced brood from the hive containing the old queen, and insert them in the hive of the nucleus (providing no disease is present), at such intervals that no brood will be chilled, which should be accomplished in from eight to ten days. Meanwhile add sheets of foundation to the old stock, and feed, to encourage comb-building, these newly built combs taking the place of the older ones transferred to the nucleus at the end of the season.

The eggs and brood of the two queens will have built up a stock much stronger than any stock with but one queen could possibly be. After all the combs containing eggs or brood have been removed from the old stock, depose the queen by the carbolic process, and with due precautions join both hives and bees together, but not until the bees of the old stock have been queenless at least twenty-four hours. If the bee-keeper is expert at the business he may perform the whole operation at the first manipulation, but the foregoing details, if properly performed, will prove satisfactory to the greatest novice.

DISEASES OF BEES.

"A Hallamshire Bee-keeper" some time since made a suggestion as likely to have been the cause of the death of my bees at the moors. I beg to inform him that he is wide of the mark. Had the deaths arisen through either the form or structure of the hive I could easily have detected it, nor was the weather during August anything like chilling the bees to death within their hives. Hives having their frames across the entrances are certainly not the most suitable kind of hives for bees and keeping them healthy, or working them to proper advantage. But do not think they would cause so wholesale a destruction. It is in detail they are defective, beginning with a little evil, and ending in a large one.

I once saw twenty hives, three of them being the "Combination" type; they were the only three that succumbed to the severity of the winter. I was not sorry for the owner, as he was perfectly cognisant of the great pains Mr. Woodbury took to take evidence and collate every fact relating to the subject for the benefit of the readers of this Journal, and denounced the hive having its frames across the entrance, which was also our verdict. In other matters touched upon by "A Hallamshire Bee-keeper" I quite agree.

Some eight or ten years ago an acquaintance wrote a letter to me stating he had been at the moors with his bees. Owing to the hot day his hives had suffered greatly, and he was afraid some were ruined. Previous to that I had examined the ventilators of his hives which were deficient, but my advice to remedy matters had not been taken. In answer to his letter I wrote informing him that owing to the overheating, "foul brood" (a disease he said he had never seen) was almost certain to appear in a virulent form. The same autumn I was with him examining some hives of a friend. The moment I turned the first one up foul brood in its most virulent form presented itself, and the stench from it before it was inverted indicated the plague. Yet, bad as the case was, he denounced my action when I tore the combs out and buried them. It was dry foul brood and was not infectious, just the very opposite from my experience and that of "A Hallamshire Bee-keeper," and I agree with the latter that in this stage it is most infectious.

The following spring the same gentleman asked me to see his bees, as they were not working as well as he wished. On an inspection being made foul brood was rampant in many of his hives. I advised him to stamp out the disease at once, which was again unheeded, and word again came to me that they had done better than expected. By the next spring matters were even worse. Not a single hive was free from the disease. I have not seen them since.

The various diseases that bees are subject to may be classed under the following heads—Infectious, Constitutional, and Climatic. The first ought to be stamped out on its first appearance, and everything connected with the hive disinfected and the bees purged. Overheating and chills must be guarded against as the best preventives. The contents of the hive should be destroyed, and the ground for a considerable distance around the hive turned over. The constitutional diseases will to a great extent remedy themselves, but no queens nor drones should be raised from such hives. The last-named disease, will, I fear, continue with us until these foreign races most subject to it, if not the only ones ever affected, become thoroughly acclimatised.

That some of the diseases we are experiencing for the first time are due to climate and constitution, or a combination of both, we need have little doubt. We never saw the common bees attacked by some of these diseases. It is singular, and perhaps worth recording, that during my long experience with the Carniolians I have never seen or known a diseased stock, but neither have I had foul brood amongst my other stocks for a longer time, or, might I say, since I made a complete revolution with the ventilating floor, the best of all antidotes to the common form of foul brood.

Then if bee-keepers would think more for themselves—leaving not a stone unturned until they had investigated the cause and nature of every disease that came within their observation—bee-keeping would be to them and their neighbours more pleasant as well as more profitable. Study well, and become impressed with "A Hallamshire Bee-keeper's" remarks, particularly his closing paragraph at page 140, and they will not regret it.—A Lanarkshire Bee-keeper.

TO CORRESPONDENTS

*** All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Books (*A Beginner*).—Mr. Barron's work on the Vine can be had post free from this office, price 5s. 3d.; and Mr. Molyneux's work on the Chrysanthemum for 1s. 2d.

Cotoneaster (*W. S. S.*).—We do not know of any Cotoneaster that clings to walls after the manner of Ivy. We know of no plants that will answer your purpose so well as green and variegated Ivies and Ampelopsis Veitchi, this latter clinging to walls like glue, but is deciduous, the leaves assuming a brilliant hue in some positions in the autumn.

Table Plants (*J. S.*).—You will find the following good plants for exhibition and general use—Cocos Weddelliana, Geonoma gracilis, Thrinax elegans, Crotons angustifolius, interruptus aureus, Johannis and Rodeckianus, Dracænas Sydneyi, ijucunda, nigra rubra, and gracilis, Reidia glaucescens, Asparagus plumosus nanus, Cyperus laxus. Aralias Veitchi, gracillima and elegantissima, and Pandanus graminifolius.

Canadian Wonder Beans—Vine Foliage (*Thomas Wickson*).—We hope we have deciphered your name correctly. The Beans are very good indeed, and the crop you have gathered affords evidence both of the adaptability of the variety for forcing and your own good culture. The Vine leaves are unusually good, being quite large enough, stout in texture, and deep green in colour. The Vines under good management cannot fail to produce fine Grapes.

Anthurium—Chrysanthemums (*J. C.*).—The spots you mention are generally caused by having the plant in too low a temperature with too much moisture in the soil or atmosphere. Perhaps the temperature has fallen below the degrees you name upon some cold nights. At this time of year plenty of moisture will suit it, and by encouraging growth the plant will probably soon recover. We do not remember your previous letter respecting the Chrysanthemums, but the following dozen bright or deep red Japanese varieties will no doubt meet your requirements:—Flambeau, Roi des Précoces, Cossack, Ornements, Tokio, Garnet, Jupiter, M. N. Davis, Mr. W. Holmes, Simon Délaux, Cullingfordi (reflexed), and M. Henry Jacotot.

Snails in Conservatory (*Inquirer*).—If you place small heaps of fresh brewers' grain or bran in suitable positions about the house, and examine them an hour or two after dark, you will probably find them covered with the snails that are eating your Ferns, and with perseverance you will soon be able to clear out most or all of the destructive molluscs. In the meantime you might syringe the plants now and then with soft soap and quassia water, with the object of rendering them less tempting to the snails, and which might consequently take to the grains or bran more readily. If you have reason to believe they lurk down amongst the rhizomes of the plants or in the soil give them some fresh and quite clear lime water. This will not hurt the Ferns, while snails cannot endure it.

Strawberries Failing (*P. T.*).—The roots of the plants are dead, but whether this is the result of their having been kept too dry, as they were on arrival, or of an overdose of liquid manure, we are unable to say. If the plants were growing satisfactorily until you gave them the soot water, you may conclude it was too strong, and instead of assisting them has caused their destruction. Liquid manure is like some medicines, excellent when rightly used, otherwise dangerous and even deadly. We have many times advised that soot water should only be used when clean and of the colour of very pale ale or weak tea, not black like porter or stout. We have seen plants of various kinds seriously injured, and not a few killed, by the injudicious use of liquid manure that was intended to assist their growth.

Caterpillar on Tea Rose (*A. H.*).—This is the caterpillar or larva of the swallow-tail moth (Urapteryx sambucata), the English name suggested by the points at the ends of the under wings of the insect, and the Latin by its occurrence upon the Elder in some seasons. The caterpillar feeds a short time during autumn, then lays up for the winter in some crack or crevice, reappearing about this time or even earlier. Actually it is found feeding on many species of trees and herbaceous plants, chiefly, however, out of doors; but if one has crept into a house to shelter during the winter season it will probably feed there in the spring on anything that may be handy. Though not a scarce insect, it appears in too small numbers to be injurious, especially as the food is so varied, and it is hardly necessary to kill the moth, which may be seen floating about the gardens in the June twilight.

Francoa and Plumbago (*Constant Reader*).—If you reside in a district where the Francoa is exclusively grown in pots under glass you would be justified in showing it as you suggest; but if the plant is more or less grown outdoors in your locality it would not be wise to include the flowers in the collection. The shoots of your Plumbago should not be stopped after this date; unless they are already far advanced, then pinch them at once, and allow the shoots to extend until they come into flower. We do not advise the shoots to be pinched, and should prefer to retard the plant from starting into growth early in spring. It takes eight or ten weeks from the time of starting to the time of flowering, but this entirely depends upon the temperature in which it is grown. We prefer to start it in an intermediate temperature, and then bring it forward as cool as possible.

Pears—Cotyledons—Crassula jasminea (*W. B.*).—The Pears probably suffered by the drought of last summer, and may have been gathered too soon. They should not be removed till they fall into the hand when slightly raised and without twisting the stalk. They often hang till the middle of November when the autumn is mild. The fruit resembles the Easter Beurré. Cotyledons can be propagated by inserting their leaves in sandy soil either in well drained pots or shallow pans. Place them in a temperature of 55° to 60°, and keep the soil rather dry until young plants appear; succulent plants at any time are more liable to suffer from excess of water than the reverse. The Crassula can be propagated by cuttings inserted in similar soil and temperature, and the plants should be grown on a shelf in a greenhouse well exposed to sun, as upon the ripening of the growth their flowering chiefly depends. Few growers have much difficulty with the plant.

Weevils Eating Ferns (*J. H.*).—The enemy which is making such "sad havoc" with your Ferns and Lapageria is the very destructive Weevil, Curculio, or Otiorhynchus sulcatus. These beetle-like pests will eat almost anything, and are by no means easy to eradicate. In the grub state they eat the roots of plants, and when developed devour the leaves and flowers. Search for them sedulously, especially at night, catching all you can, and so prevent a further increase. Shaking the plants violently over a white cloth at night will dislodge many, and they will be visible on the white surface, and can be the more readily secured. A bitter decoction of aloes, quassia, and tobacco is said to render plants distasteful to the weevils. Early in spring as much of the old soil should be removed from the Ferns and other plants as can be safely done, and probably many small white grubs, the larvæ of the weevils, will be destroyed. Keep the soil moist, and a solution of hellebore, made by pouring boiling water on 2 ozs. of the powder, then increasing to a gallon of water before using might do good. It will not injure foliage or roots.

Vine Leaves Decaying (*D.*).—Too much moisture in the house consequent on its being "crowded with Ferns and other plants," and also its being possibly kept too close, especially at night, would contribute to the decay in patches of the very thin leaves. The root action is also, we suspect, defective, or, what amounts to the same thing, several of the roots have found their way into ungenial soil. The Vines will probably improve as the season advances, especially if you take care the growths are not overcrowded, and that the plants are watered soon enough for the atmosphere to become moderately dry before night; and we should expect still better results if you could raise the temperature 5°, and leaving the top ventilators open to the extent of an inch or so all night, increasing the ventilation early in the morning as soon as the sun influences the temperature of the house. If by a thick mulching of manure you could incite the free production of roots near the surface, then apply phosphatic fertilisers, such as boncmeal or special manures that are advertised, the leaves would soon assume a stouter texture, and be less liable to decay through the effects of unfavourable atmospheric conditions. The Vines are evidently in a weak and unsatisfactory state.

Caterpillars on Azalea and Vine (*J. W.*).—On examination, the caterpillars forwarded appear to be those of the very variable moth Peronea hastana, which possesses many synonyms from this circumstance, and is also found feeding on a great variety of plants, on some as diverse as the Rose and Willow, for instance. Its occurrence upon the Azalea does not seem to have been noted before. These leaf-rolling larvæ or caterpillars belonging to the tortrix group are often exceedingly like each other in allied species, and it is possible that the Grape insect may be a different species, but bearing resemblance to the Azalea eaters. If it be the same, we should presume the larvæ that attack your ripening fruit are a second brood, the moths of which emerge from the matured larvæ of the spring season. One difficulty in dealing with these caterpillars, which conceal themselves in folds of leaves and silken wraps is the protection they thus obtain from any syringing process. The destruction of tortrix caterpillars has been attempted by a solution of petroleum in water, afterwards washed off with warm water, also by means of a solution of nicotine soap, and by a liquor composed of a decoction of quassia chips made alkaline with soda. All leaves containing the pupæ or chrysalids should be promptly removed.

Lifting Snowdrops (*C. W.*).—The most suitable time to lift the bulbs is from the beginning to the middle of July. The time will vary a week or two according to the season. They should not be lifted until the foliage has ripened or leaves the bulbs with ease; the skin of the bulbs should also be thoroughly brown. Lifting is best done during dry weather. If lifted just before the foliage leaves them there is no difficulty in picking the bulbs from amongst the soil. They are usually lifted in Lincolnshire with a fork, and boys are employed for picking them from the soil. When the foliage has completely dried there is some difficulty in thoroughly clearing the land of them. When lifted

they should be spread out thinly in a cool airy shed, or where partially shaded from full sun for a time until they become hard and dry. Injury to the bulbs often results from fully exposing them to the sun directly they are lifted from the ground. Allow them to dry and harden first, and then fully expose them to the sun. Before this is done they can be sorted, and the small bulbs, or "seed" as they are called in the districts where Snowdrops are grown, can be planted again by the end of July or early the following month; the sooner they are in the ground again the better. With the first rains that thoroughly moisten the soil they commence root activity. Very frequently a good season's growth is spoiled by delay in planting until the season has too far advanced.

Bed for Carnations (*T. L. P.*).—As the position on the south side of a wall will, perhaps, be hot and dry in the summer, you must provide a depth of at least 2 feet of good soil for the plants. It does not follow that the present soil need be excavated to that depth, as it may probably suffice to clear out the stones and rubbish down to the heavy loam, then break this up well and enrich it with manure, also spreading on a good thickness of manure before filling up with fresh compost. This should be 18 inches in depth. There is no better soil than turfy loam, inclining to heavy rather than light, that has been in a heap for six months or more, and perfectly free from wireworms that are not infrequently present in loam recently dug from a pasture. To five barrowfuls of loam add one of decayed manure—that from a cow stable preferably—dry enough to be broken into small particles for mixing, half a barrowful of wood ashes and the same of vegetable refuse, with an 8-inch potful of soot and the same quantity of bonemeal. Turn the whole a few times, or till the ingredients are uniformly incorporated. Provided the compost is neither very wet nor very dry when placed in the bed, and is pressed down rather firmly, it should grow Carnations well. It may be desirable to cover the surface of the bed between the plants 2 inches thick with very short manure, or if you prefer something that may be deemed more presentable, with cocoa-nut fibre refuse. The sooner Carnations are planted the better, and they should be strong, and now established in pots for flowering well this year. They can then be planted without any material disturbance of the roots, and great care must be taken that the balls of soil from the pots are not by any means dry, neither excessively wet, when inserted.

Plums not Setting (*D. W.*).—The spur with the foliage and incipient fruits sent appears quite healthy, but only one out of the number of fruits apparently ready for swelling was set, and nothing could prevent the others falling. This may be either the result of a deficiency of pollen through the cells not bursting, which is not uncommon, or of too much sun during the blossoming period. While a free circulation of dry air with sun for drying the pollen are essential for its liberation and dispersion, we have often noticed that when the sun is very bright indeed and the air unusually dry, that Plums fail to set not only under glass but in the open. The petals of the flowers wither and fall too soon, and the embryo fruit is deprived of support at a critical time, collapse following. The same result we have observed with Peaches under glass, and have known half of a tree to set and swell a full crop of fruit while the other half was almost barren, simply because one half of the tree had a skiff from the syringe when the petals appeared to be turning limp under the influence of the sun while the spray was withheld from the other half where scarcely any fruit followed. It is only under exceptional circumstances that it is necessary to supply moisture for supporting the blossoms, or for preventing an exhaustively dry atmosphere at the time indicated, but the necessity occasionally arises, and then when nothing is done moisture is extracted from the blossoms and embryo fruit more quickly than it is supplied by the roots of the trees, and the small check thus sustained affects the crops prejudicially and sometimes seriously. There is never such a good set and free swelling of fruit in gardens and orchards as when an occasional light warm shower falls, with sufficient intervals of sun for the bursting of the pollen cells for the purpose of fertilisation. This is quickly effected, and the soft genial atmosphere sustains the fruit then in formation, while an arid atmosphere deprives it of vitality. As during the blossoming of your trees you had "splendid sunshine," these remarks may not be inapplicable to your case.

Gloire de Dijon Rose (*J R. G.*).—The buds, shoots, and leaves sent indicate that the tree is in an enfeebled state, or, in other words, its sap is far too much subdivided through a number of small channels to exert sufficient force for the expansion of the buds. You do not say whether the tree is under glass or in the open; however, wherever it may be we should cut it severely back, probably to the extent of removing three-fourths of the growths, then, with the roots in good soil, and adequate moisture afforded, young growths would push strongly and long stout shoots ripen during the season for producing fine blooms another year. If some blooms are satisfactory now, or likely to be, the pruning of the parts bearing them can be deferred till after they are cut, then proceed in the manner advised in answer to another correspondent, who is in a similar difficulty to yourself, but with a Maréchal Niel. You will observe in an article on two establishments at Swanley that the great grower of Rose blooms for market, Mr. Philip Ladds, cuts down the whole of the growths of his Maréchal Niel and Gloire de Dijon Roses in twenty houses as soon as the golden harvest is gathered, covering the roofs with new growths annually. But no one can grow Roses successfully, no matter how good the soil and correct the pruning may be, if the growths are not kept scrupulously free from insects. In reference to your observation that "there is scarcely any green fly on the plant," we have to say that there are more aphides on the leaves you have sent in a small box than we should permit on a very large plant or tree. It is true only a few of the insects are "green" and the majority are yet too young and small to be seen clearly at a glance, but they are there, and if your plant is large we venture to say it is infested with thousands of aphides, and the glutinous substance on the leaves that seals their pores is the result of them. The tree cannot thrive till it is thoroughly cleansed, and all such growths as those before us should be promptly cut off and burned. The information you received on heating from our able coadjutor we know would be good.

Making Mushroom Spawn (*J. Thorpe*).—It is easy enough to make Mushroom spawn bricks after seeing how the work is done, and watching the process for a season, and not difficult to state the ingredients of which bricks are composed and the process generally, but not one person out of fifty would succeed in the first attempt by following printed instructions alone. An expert might publish the requisite details for making a pair of boots, but it does not follow that the instructions could be successfully carried out by a person who had never seen the work done. All makers of Mushroom spawn do not make bricks of exactly the same materials. The following particulars are given in the *Cottage Gardeners' Dictionary*—"Mix three parts of horse dung without litter, two of cow dung, one of decayed tanner's bark, and one of sheep's dung, and one of good loam, mix to the consistency of mortar, and mould in small frames like those used by brick-makers, 6 inches long, 4 broad, and 2 deep. Three holes to be made half through the bricks, an inch apart, with a blunt dibble, for the reception of the spawn. They should be put on their edges on boards for the convenience of moving during fine days, as they must be made perfectly dry when the spawn is inserted, which they often appear to be on the outside when they are far otherwise internally. Before they are perfectly dry they require great care in handling and turning, from their aptitude to break; but in about three weeks, if dry weather, they become quite firm. To pervade them with the spawn, a layer of fresh horse litter, which has laid in a heap to sweeten, as for a hotbed, must be formed, 6 inches thick, in a dry shed. On this a course of the bricks is to be laid, and their holes completely filled with spawn; and, as the bricks are laid in rows upon each other, the upper side of each is to be scattered over with some of the same. The bricks are not placed so as to touch, so that the heat and steam of the dung may circulate equally and freely. The heap is to terminate with a single brick, and when completed covered with a layer, 6 inches thick, of hot dung, to be reinforced with an additional 3 inches after a lapse of two weeks. The spawn will generally have thoroughly run through the bricks after another fortnight. If, however, upon examination, this is not found to be the case, they must remain for ten days longer. The bricks being allowed to dry for a few days before they are stored, will then keep for many years." Lumps of spawn for insertion may be had from the best bricks obtainable; it must be pressed firmly in, and may be plastered over with cowdung. Some persons pile the bricks on edge, so that they do not quite touch each other, in order that the heat from the manure can pass between them. You can now try your hand at the work, but it is possible you will have to try again before you succeed in your object.

Marechal Niel Rose Failing (*L. H.*).—Your Maréchal Niel Rose tree that covers the roof of the greenhouse and gave 650 blooms last year is in a debilitated state. It has been exhausted by the burden, and in expecting 800 blooms this year you expected more than the tree could produce. Buds formed freely, as they often do on weakened trees, but they did not expand because of a lack of strength for their development. The condition of the buds, stems, and foliage sent all clearly indicate exhaustion, and your tree is in very much the condition that a Vine would be in that had been allowed to grow with little or no pruning for two or three years, and to ripen as well as it could all the bunches that were produced. The crop in such a case would soon be worthless compared with that of a properly pruned and well managed Vine. You say you pruned your Rose seven weeks ago. That, according to the extent of the pruning, might be of some benefit, but the operation was performed months too late for the production of strong growths that can alone produce grand blooms. The proper time for pruning this Rose when it flowers under glass in the spring is as soon as the blooms are cut, and then the pruning should be as severe as that applied to Vines in the autumn or early winter. If your tree were ours we should cut away nine-tenths, and perhaps nineteen-twentieths, of the growths now, then by syringing the stems and maintaining a close moist atmosphere, also giving probably much more warm liquid manure to the roots than you are in the habit of doing, we should force fresh shoots to push from the stems, and these growths would be very different in character before the end of the season from the present weak shoots, and would yield much finer blooms in the spring than your tree in present state could possibly develope. Some persons cut back all the growths of Maréchal Niel after flowering down to the base of the rafters, and cover the roof during the season with vigorous growths that follow the pruning. These are not allowed to grow into a thicket, but are disposed so that the leaves can expand under the direct influence of light. The wood then ripens, and handsome blooms follow in abundance. Other growers cut back the branches to a few main stems, much in the way that Vines are spurred. Last spring we visited Cheshunt just after Mr. George Paul had pruned a Maréchal Niel in a large house. Nothing was left of the growths that had covered the roof, but a few strong naked branches 3 or 4 feet apart were all that remained, and these were slashed here and there with a knife to arrest the sap and force latent buds to start from the rod-like stems. With the roots in good soil the Maréchal may be pruned to any extent, and, as a rule, the more severe this is the greater is the vigour of the growths resulting. If you

can remove some of the surface soil from the roots, adding fresh loam and manure, making it firm, and surfacing thickly with rich manure, the dressing will be of great benefit; but without it the tree may be invigorated by pruning on the lines suggested, and giving an adequate supply of manure to the roots.

Manure for Fruit Trees (*A. S., New Zealand*).—While you appear to be quite aware that Thomson's, Jensen's, and other advertised fertilisers for Vines are also good for fruit trees, you are in the unfortunate position of not being able to obtain them in your colony, and ask for some ingredients you can obtain and mix for your purpose. Superphosphate of lime can be had in most agricultural districts, and is good for fruit trees, applied at the rate of a quarter of a pound to the square yard, or less if the trees are making fairly good growth. Bonemeal and chloride of potash, about twice the quantity of the former, applied at about the rate mentioned, form an exeellent mixture; and if the trees do not grow fast enough it may be supplemented with a dressing of somewhat less than half the above quantity of sulphate of ammonia; but forcing very luxuriant growth of trees when young is not highly desirable, though the wood may perhaps ripen better with you than in England. What is wanted is free yet short-jointed wood, gradually solidified as the growth extends, for the formation of strong yet fruitful trees. The mineral ingredients should be applied when the earth is moist, or say three months before the trees start into growth, the ammoniacal for such trees that need it (and all will not be alike) a month or two later; but the earth should be still moist, as, if it is dry, and continues so for a considerable time after chemieal fertilisers are applied, they remain comparatively inert. Many persons are in the habit of applying them too late in the spring in this country, then if the summer prove dry, good results are not apparent, and the manures are condemned without a fair trial. The finer bonemeal is ground the quicker it acts, coarser particles, or erushed bones, being slower in aetion but more lasting in effect. With a labour wage rate of 5s. per day of eight hours, cleaning many acres of land must be costly; still, if weeds are unchecked they will deprive the trees of much of the soil's fertility, and have their share of the manure supplied. A covering of long grass, as you suggest, placed round the trees as far as the roots extend, would, if thiek and dense enough to exclude light, and placed in position soon enough, have a tendency to suppress the growth of weeds, and would at the same time act beneficially in arresting evaporation, and thus seeuring more uniform moisture in the earth for the support of the trees. We think the plan worth trying under the circumstances, and the mulehing cannot be applied too early in the spring. Both for the purpose of mulehing and manuring you may ealculate that the roots will extend somewhat beyond the spread of the braneh es, and material will be wasted by applying it close round the stems alone. Mr. Pettigrew finds the Gammy Noir the best Grape for vineyard purposes in South Wales. He procured his stoek from France, the variety, so far as we know, not being grown for sale by British nurserymen. We shall be glad to see the fruit you hope to send us some day, and are pleased to hear that the Journal is a welcome guest and serviceable in New Zealand, where we have several subscribers. We shall have pleasure if we are able to give you and other colonials useful hints at any time, and like to feel we have a link with friends of kindred tastes and engaged in a common work in the "Greater Britain beyond the seas."

Names of Plants.—We only undertake to name speeies of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six speeimens can be named at onee. (*N. C.*).—It is a variety of Rosa polyantha. (*R. O.*).—1, Adiantum seutum; 2, Aralia gracillima; 3, Reidia glaucescens; 4, Pteris serrulata cristata; 5, Pteris umbrosa. (*G. B.*).—1, A very poor specimen, but it resembles Grevillea Thelemanniana; 2, Polygala Dalmaisiana. (*W. W*). —Euonymus japonicus.

COVENT GARDEN MARKET.—MAY 2ND.

MARKET well supplied with a steady business doing. Little or no alteration in pr ces.

FRUIT.

	s.	d.		s.	d.
Apples, ½ sieve..	2	6	to	4	6
Nova Scotia and Canada barrel	10	0		18	0
Cobs, 100 lbs.	45	0		0	0
Grapes, per lb...	3	6		6	0
Lemons, case	10	0		15	0
Oranges, per 100	2	0	to	5	0
Peaches, dozen	18	0		30	0
Pears, dozen	3	0		6	0
St. Michael Pines, each	3	0		5	0
Strawberries, per lb. ..	4	0		8	0

VEGETABLES.

	s.	d.		s.	d.
Artichokes, dozen	1	0	to	2	0
Asparagus, bundle	2	6		4	0
Beans, Kidney, per lb. ..	1	6		0	0
Beet, Red, dozen	1	0		2	0
Broccoli, bundle	0	0		0	0
Brussels Sprouts, ½ sieve	3	6		4	0
Cabbage, dozen	1	6		0	0
Capsicums, per 100 ..	1	6		2	0
Carrots, bunch	0	4		0	0
Cauliflowers, dozen ..	3	0		4	0
Celery, bundle	1	6		2	0
Coleworts, doz. bunches	2	0		4	0
Cucumbers, each	0	4		0	7
Endive, dozen	1	0		2	0
Herbs, bunch	0	2		0	0
Leeks, bunch	0	3		0	4
Lettuce, dozen	0	9	to	1	3
Mushrooms, punnet ..	0	6		1	0
Mustard and Cress, punt.	0	2		0	0
Onions, bunch	0	3		0	0
Parsley, dozen bunches	2	0		3	0
Parsnips, dozen	1	0		0	0
Potatoes, per cwt.	4	0		5	0
,, Kidney, per cwt.	4	0		0	0
Rhubarb, bundle	0	2		0	0
Salsafy, bundle	1	0		1	6
Scorzoners, bundle ..	1	6		0	0
Seakale, basket	1	3		1	9
Shallots, per lb.	0	3		0	0
Spinach, bushel	1	6		2	0
Tomatoes, per lb.	1	6		2	6
Turnips, bunch	0	4		0	6

PLANTS IN POTS.

	s.	d.		s.	d.
Aralia Sieboldi, dozen ..	6	0	to	12	0
Arbor vitæ (golden) dozen	12	0		24	0
Arum Lilies, dozen.. ..	6	0		12	0
Azalea, dozen	12	0		24	0
Cineraria, dozen	6	0		10	0
Cyclamen, dozen	12	0		18	0
Dielytra, per dozen ..	12	0		18	0
Deutzia, per dozen ..	6	0		9	0
Dracæna terminalis, doz.	30	0		60	0
,, viridis, dozen..	12	0		24	0
Erica, various, dozen ..	9	0		18	0
,, ventricosa	18	0		24	0
Euonymus, in var., dozen	6	0		18	0
Evergreens, in var., dozen	6	0		24	0
Ferns, in variety, dozen	4	0		18	0
Ficus elastica, each ..	1	6		7	0
Foliage Plants, var. each	2	0	to	10	0
Fuchsia, dozen pots ..	6	0		12	0
Genista, per dozen ..	6	0		12	0
Heliotrope, dozen pots ..	6	0		9	0
Hydrangea, dozen	9	0		18	0
Lilies Valley, dozen ..	18	0		24	0
Lilium doz.	12	0		18	0
Marguerite Daisy, dozen	9	0		12	0
Musk, dozen pots	3	0		4	0
Myrtles, dozen..	6	0		12	0
Narciss, per dozen ..	8	0		10	0
Palms, in var., each ..	2	6		21	0
Pelargoniums, dozen ..	12	0		18	0
,, scarlet, doz.	4	0		6	0
Poinsettia, dozen	0	0		0	0
Spirea japonica, doz. ..	6	0		12	0

CUT FLOWERS.

	s.	d.		s.	d.
Abutilons, 12 bunches ..	2	0	to	4	0
Anenome (Fulgens), 12 bunches	3	0		6	0
Anemones (French), 12 bunches	1	6		4	0
Arum Lilies, 12 blooms ..	2	0		4	0
Azalea, 12 sprays	0	6		1	0
Bouvardias, bunch	0	6		1	0
Camellias, 12 blooms ..	1	0		3	0
Carnations, 12 blooms ..	1	0		3	0
Cyclamen, 12 blooms ..	0	6		1	0
Daffodils, Double, 12 bchs	2	0		4	0
,, Single, 12 bchs	1	0		3	0
Daisies, 12 bunches ..	2	0		4	0
Epiphyllum, 12 blooms ..	0	0		0	0
Encharis, dozen	3	0		6	0
Gardenias, 12 blooms ..	2	0		4	0
Hyacinths, French, 12 bunches ..	1	0		2	0
Lapageria, coloured, 12 blooms	1	0		1	6
Lilium longiflorum, 12 blooms	3	0		6	0
Margnerites, 12 bunches	2	0		6	0
Lily of the Valley, 12 sprays	0	6	to	1	0
Mignonette, 12 bunches	3	0		6	0
Narciss, white (French) 12 bunches	0	0		0	0
Narciss, various, 12 bchs	3	0		6	0
Pelargoniums, 12 trusses	0	6		1	0
,, scarlet, 12 trusses	0	4		0	6
Primroses, 12 bunches ..	0	9		1	6
,, (double), bunch ..	0	9		1	6
Roses, Red, 12 blooms ..	2	0		6	0
,, (indoor), dozen ..	1	0		3	0
,, Tea, dozen	1	0		2	6
,, red, dozen (French)	0	0		0	0
,, yellow	2	0		4	0
Spiræa, bunch	0	6		1	0
Stephanotis, 12 sprays ..	4	0		6	0
Tropæolum, 12 bunches	1	6		2	0
Tuberoses, 12 blooms ..	1	0		2	0
Tulips, dozen blooms ..	0	6		1	0
Violets, 12 bunches.. ..	0	4		0	9
,, (French), bunch	1	0		2	0
,, (Parme), bunch	2	0		3	0
White Lilac, per bunch ..	5	0		6	6



HELPS TO SUCCESS.

AT its monthly meeting on the 14th ult., the Canterbury Farmers' Club listened to a very important paper by Mr. E. Tallerman, on the practical measures necessary to be taken to insure a more profitable realisation from fruit. Owners of English orchards and fruit plantations do not at present make the best of their crops. An assertion was made at this meeting that in Kent the year before last thousands of tons of fruit were actually wasted owing to the low price in the metropolis not being sufficient to meet the heavy demands made by the railway companies for freightage. The same result happened that year in the Plum districts of Pershore and Evesham, and grievous lamentations were made, not only by sufferers, but by all who witnessed the immense waste, and it was pointed out at the time that such would not have been the case on the Continent, where the surplus Plums would have been dried and packed in boxes for future marketing, and the Cherries and other fruits have been either converted to jam, or subjected to an equally practical process of preservation The object of the paper read was to show the Kent farmers the necessity of combining together for the establishment of refrigerating and evaporating establishments for the preservation of fruit, which, having been once provided, the market need never be glutted by over-abundant supplies. By thoroughly working the co-operative principle their fruits could be applied to a great many different purposes, as is at present done in America. Not only was the improved fruit marketing of the United States fully described, but also the tasteful and tempting methods by which fresh fruits are made up in baskets in France, although even in that country large quantities are boiled in sugar and converted to crystallised dessert fruits of various kinds. The drying process of the Spaniards, Turks, and Greeks were also detailed, and it was pointed out that the courses pursued by foreign fruit growers could be all the more advantageously adopted in Kent, as it was within easy reach of so many large centres of population. Mr. Tallerman

went also minutely into various processes, stating that green fruits might be safely stored in a cold dry air chamber, and kept in a fresh condition for from two to four months at a temperature of from 40° to 45°. For fruit evaporation he said that the numerous vast houses in the Hop districts could be utilised as evaporators at times when they at present remained unoccupied. He also briefly described the machinery necessary to be provided for the canning, bottling, and crystallisation of fruit, and for its conversion to jam. The discussion which ensued took a practical turn, and the necessity of such a co-operative association as suggested being established was thoroughly admitted.

We have given the foregoing paragraph from a report of the Canterbury meeting as tending to enforce the teaching of our last article. It is also important as affording additional proof of the great want of thoroughness and knowledge of their business on the part of many farmers, and this is all the more remarkable because it has reference to actual fruit farmers, men to the manner born, yet who have hitherto been content simply to cultivate their fruit and dispose of it solely as raw produce without a thought of turning part of it to account as a manufactured article. Glad are we to know, however, that the heavy losses of ripe fruit the year before last has induced several farmers to turn their attention to jam making and other methods of fruit preservation. We would urge them especially to see that such preserved fruit is really a pure first-rate article. If they do this so as to build up a reputation and sustain it unblemished by any trick of trade they may feel assured of a demand for it. We mention this because we find it as difficult to purchase pure jam as it is to obtain really good butter. The jam generally has a slimy consistency which betrays the presence of gelatine, and there is a poverty of flavour which points to heavy adulteration, and of butter quite two-thirds is unpalatable either from cows having improper food or from the foul odours taken up by the milk in cow house and dairy.

Perhaps the greatest helps to success are painstaking and thoroughness, no matter to what branch of farming they are applied. In the great corn-growing districts farmers are very apt to pooh pooh advice about fruit or dairy farming, yet how many of them are worthy to take rank as first-class corn farmers? Do we require a test plain and unmistakeable? Take the returns of corn averages in any part of, or for the entire country, and there you will see that 30 bushels per acre is a full average for the Wheat crop; yet we regard that fact as proof positive of the general deficiency in cultural knowledge of farmers, and may insist upon it that the average should be at least 10 bushels higher. We occasionally see reports of extraordinary crops of this or that which are the outcome of special efforts. Why, we ask in the name of common sense, do we not make special efforts every season and with every crop?

(To be continued.)

WORK ON THE HOME FARM.

Satisfactory progress continues to be made with work on the land. Mangold sowing followed Barley sowing closely, and the work was done expeditiously and well. The preparation for Swedes was next taken in hand, and we hope to have them sown shortly. On the home farm a small field next the large Mangold field, which was also intended for Mangolds, is so foul with couch grass that we decided not to sow it with Mangold, but to give it a bastard fallow, and sow White Turnips for spring feeding. April has certainly had more tears than smiles this year, and corn hoeing has really been out of the question. Charlock is now visible, and the hoes must be made to move briskly by having all the work done by the acre, and by a slight advance in price to encourage the men to exert themselves. One of our bailiffs, in his zeal to excel, had had the hoes at work among winter Beans in showery weather when we last went to inspect the farm in his charge, and we had to caution him not to waste labour. We have had all the couch grass upon the surface of the Barley fields picked off by the rook boys, who are better so employed than sitting under a hedge. We hold that everything possible and reasonable should be done to get rid of weeds. We cannot afford to let weeds rob the soil of one grain of fertility, and we had much better spend 3s. or 4s. an acre now upon weed eradication than to see the flaunting yellow Charlock or scarlet Poppy later on as an unmistakeable sign of our want of energy and care. We have an old allotment, which we have taken in hand, so badly infested with Chickweed that in this showery April now stirring with duckfoot or other harrows would destroy, and we have decided to plough, harrow, and sow with Lucerne, so that the Lucerne plant may get a sufficient start of the inevitable Chickweed to enable us to get the land clean.

The loss of a couple of the best lambs from what the shepherd termed strong inflammation led to an inquiry, which showed that he had been trying to force them on by using too much lamb food. The lusty animals eat it greedily, become too full in condition, and the result was a fit of apoplexy ending in death. We have taken much pains to explain the cause and effect of this to the shepherd in order that he may not again err through overmuch zeal. Depend upon it there is nothing like the master's eye to frequently overlook and check the doings of ignorant workmen.

THE FARMERS' CLUB AND FARM INSECTS.

At the monthly meeting of the Farmers' Club held on Monday evening at the "Salisbury Square Hotel," Mr. A. Pell in the chair, Miss Ormerod of Torrington House, St. Albans, read to a large audience, including several ladies, and with the aid of diagrams, an interesting paper on "Farm Insects." In commencing the reader expressed her belief that during the last few years there had been a great increase of insects both in farm and orchard crops, though very little in the number of kinds that troubled them, and said that increase appeared to be an unavoidable consequence of lessening the amount of wild ground by the march of cultivation, and also by the spread of towns and villages. After careful search of records she thought the injurious insects here at the present day—that was those that were seriously hurtful to their living field and orchard crops, and vast numbers besides less commonly known—had been here for fifty, seventy, or a hundred years, and except the Hessian fly she did not know of any insect pest to growing crops which were newly introduced into this country. The enormous green and blue-and-white striped caterpillars of the death's head moth, which especially preyed on Potato leafage, were present in great numbers, and in all parts of the kingdom in 1826. After alluding to various modes of arresting the ravages of insects she said they were now steadily advancing in knowledge of the habits of crop pests and of practical measures which could at a paying rate be brought to bear upon the yearly causes of loss. Good cultivation and such preparation of the land as would destroy the shelters of pests under clods above the surface, or in cells beneath it, were amongst the best ways of avoiding much mischief from a commencement of attack. Among the causes of the evil Miss Ormerod mentioned the screenings of foreign corn, which she thought should either not be spread, or before being spread should be rendered innocuous. In concluding she declared herself very emphatically against the sparrow as a pest to the farmer. Taking a broad view of the state of affairs all over the country, she observed, they saw increase of Passer domesticus (to distinguish him clearly from his harmless namesake the hedge-sparrow), and they also saw increase of farm insects. Besides the downright mischief to corn and other things farmers were suffering now, and would suffer severely unless the matter were taken in hand, by the sparrow driving away the truly insectivorous birds, and notably the martin. The numbers of this bird were demonstrably lessening, and if the small proportion of caterpillars that the sparrows take were considered by the sparrow-lovers to be such an important help to us, it must be a very much more important evil to have the martins driven away which destroyed the perfect insects by legions just when they were about to lay their eggs. They had, Miss Ormerod said, a strong warning before them in the United States of the mischief following the unchecked multiplication of the English sparrow; and she estimated the total loss from insect ravages in farm crops and fruit farming, and among farm stock, at from £8,000,000 to £10,000,000 per annum. A discussion ensued, and on the motion of Mr. Herbert Little, seconded by Mr. T. Carrington Smith, a vote of thanks was given to Miss Ormerod for her paper.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				
1888. April.	Barometer at 32° and Sea Level.	Hygrometer. Dry.	Hygrometer. Wet.	Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature. Max.	Shade Temperature. Min.	Radiation Temperature In sun.	Radiation Temperature On grass	Rain
	Inches.	deg	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 22	29.687	41.2	41.9	E.	45.2	48.4	37.6	65.9	34.1	0.127
Monday 23	29.741	42.7	41.5	N.E.	44.4	48.7	40.4	53.6	39.7	0.419
Tuesday 24	29.849	46.5	46.3	E.	44.2	47.1	41.0	55.1	40.6	—
Wednesday .. 25	30.004	40.8	39.5	N.E.	43.8	50.9	37.4	69.8	36.7	—
Thursday 26	30.157	40.6	36.3	N.E.	43.5	48.3	36.4	101.3	34.4	—
Friday 27	30.152	43.2	38.8	W.	42.8	57.3	30.9	93.6	25.6	—
Saturday 28	30.056	54.9	51.5	W.	44.2	62.0	42.1	101.6	43.2	—
	29.949	44.7	42.3		44.0	51.8	38.0	80.8	36.3	0.546

REMARKS.

22nd.—Cloudy morning; wet from 0.30 P.M. till 7 P.M.; dull evening.
23rd.—Dull and damp till 2 P.M., then wet till midnight.
24th.—Dull and damp all day.
25th.—Cloudy and cool morning, bright afternoon.
26th.—Fine, and at times bright, though generally dull.
27th.—Fine bright morning, though cold, with slight frost early; cloudy, with slight showers in early afternoon; fine and bright again from 2.30 P.M.
28th.—Fair morning, bright early, and much warmer; not so fine in afternoon, with drops of rain.

Another cold week, being about 4° below the previous one. It is rather curious that in each month of this year one week, and only one week, has been of more than the average temperature. Slight frost in air and a sharp one on grass on the 27th.—G. J. SYMONS.

PRIZE ESSAYS AND PRIZE WINNING.

SOME time ago Mr. S. Thacker, a great supporter of the Notts Horticultural Society, offered prizes for essays on the duty of the gardener to his employer, to be sent under seal with a motto, and to be read by a gentleman at one of the Society's meetings. The essays were admirably read on April 11th by a Nottingham gentleman, Mr. Woodward, though he had not seen the MSS. until just before the meeting. The first prize of 20s., accompanied by the first-class certificate of the Society, was adjudged to "Excelsior," the *nom de plume* that was first adopted by Mr. N. H. Pownall, Lenton Gardens, Nottingham, in his contributions to the *Cottage Gardener* many years ago, and who has subsequently enriched the pages of the *Journal of Horticulture*. The certificate he has won will be prized by him, and he deserves it better than many deserve the prizes they win at shows. There are able gardeners in various parts of the kingdom who have done much more towards the advancement of horticulture, and in promoting superior cultivation, than half the showmen have; but the educational work of the former, in the form of essays, read or published, founded on useful knowledge acquired by long practice, is seldom recognised, while "honours" without number have been dispensed to exhibitors for plants, fruit, and vegetables, that have, on the face of them, the stamp of inferiority, and not only so, but prizes have been adjudged to men for what they never grew, but bought, begged, or borrowed for the occasion. Thus the pot-hunters and schemers are rewarded, while the brain-workers, who strive and study to improve themselves and benefit others, are, with few exceptions, severely overlooked. Offering prizes for essays on subjects pertaining to gardening, and as affecting those engaged in it, whether as masters or men, is a step in the right direction; but power should be reserved to withhold them when devoid of substantial value and literary merit, as some we have seen undoubtedly are. Mr. Pownall's is not one of them, and we have pleasure in assigning it a place in our columns. Here it is:—

SUBJECT: THE DUTY OF THE GARDENER TO HIS EMPLOYER.

A general subject, dealing with the gardener in general, or the profession as a whole, and the employer in general, or the body of employers as a whole. The connection between these two representative people is the duty of the one to the other, the lesser to the greater, the servant's duty to the master; and that connection, seeing that no special type of employer or master is indicated, and no particular gardener specified, whether the gardener with "acres of glass and regiments of men" under him, or the gardener of spade and wheelbarrow, worked by himself, can only be treated in a general way, broadly and comprehensively, primarily and essentially so as to principles, and only relatively so and in a lesser degree as to details. To attempt to go into details, having no guide in what direction to go, would most surely land the writer in uncertainty and confusion. There are great principles which embrace all the relations of employer and employé, and these should govern, and must govern, the gardener's duty to his employer, whatever sort of gardener or employer each respectively may be. It is clearly impossible to reduce the subject to one class of gardeners and one particular section of employers. The foundation of the principles alluded to lie in two wise sayings—"Do as you would be done by," and "Whatsoever thy hand findeth to do, do it with all thy might."

The first thing between the gardener and his employer is the contract, or engagement. It is the duty of the gardener towards himself, as well as towards his master, to see that his engagement is based on fair, honourable, and profitable lines, and that that engagement is made perfectly clear and open, and as far as possible put into "black and white." It is his duty in this contract to see that he gets proper remuneration—a cheaply paid servant is often a dear one to the master; the time or hours of work positively fixed, holidays arranged, severance of connection provided for, the privileges and allowances as to house, coals, light, vegetables, commission on sales, if any, &c., all made plain and unmistakeable, so that there may be no after difference, but that everything may work smoothly. In these arrangements, and in all others which may arise, the gardener must consider and act upon the golden rule of "Doing as he would be done by." The contract or engagement concluded, the gardener must see that the engagement thus entered upon be loyally and efficiently carried out.

It may appear to some a small matter and a superfluous one, but it is none the less the duty, the bounden duty, of the gardener to his employer, that he, the gardener, personally respect himself, and order himself rightly. "Know thyself" is the teaching of the ancients, and means very largely respect thyself, reverence thyself, rise to the level (and above, if possible!) of thyself. This done, there will be no room for pride and self-conceit. In person the gardener should be scrupulously clean and tidy, appropriately, becomingly, and serviceably dressed. He must be sober and industrious, courteous in manner and speech, faultlessly honest in everything, and careful that all who are in any way connected with the garden be honest also. Whilst his hands are fully occupied he must be constant in filling his brain with wholesome ideas by observation and reading. He must be quick as well as sound in judgment, and prompt and decisive in action. He must economise his time so as to get the most out of it he can, and always on the watch to make his time and labour bulk out into usefully resultful ends. He must keep down bad personal habits as drinking, smoking (if a smoker the habit must never be indulged in in working hours), gambling, flirting with his female fellow-servants, dawdling, or, as it is commonly expressed "awming," about, late hours, &c., as well as fussiness, faddiness, and fidgettiness in his work, and also conceitedness, previously hinted at. These habits all apply with strong force to the young gardener, and some of them to the elder gardener. The first-named bad habit, it must be said with sorrow, unfortunately seems to beset the elder gardener, and has been the ruin of many a good man. Loss of interest in his work and neglect of his personal appearance, to say nothing of other things, often come out of this habit, and both are a breach of the gardener's duty to his employer. Bad habits are easily formed, but are not so easily broken off.

The gardener's duty to his employer in all money matters must be exercised wisely and conscientiously as to what he buys himself, in plants, seeds, manures, or other garden necessities. He must see to it that he does not get anything but what will do good to his employer or his estate, not indulging in fanciful purchases but only in really necessary things, and taking great care that what he gets shall be equal to the money spent. It must be also a duty with him to see that his work be well done, and constantly, not just once or twice and then left off; to see that whatever comes into the garden, whether by his orders or his employer's, shall be true and good in quality and of full value as to weight and quantity. His garden accounts must be kept with the strictest regard to economy, and so managed and cared for as if he had to pay them himself. It is his duty to his employer, and very much so to himself, that he keep correct account of the produce of the garden and how consumed or disposed of. His tools and implements must be always kept in workmanlike order

The gardener's duty to his employer in his work will make him study it at first, and day by day ever after, thoroughly, as a whole and in detail, and down to the lowest and most commonplace detail. Nothing must be lightly passed over, nothing scamped, but everything attended to with punctuality, promptitude, and with the highest skill, both as to plan and execution, which his head can devise and his hands carry out. He must "put his conscience into his work." He must, above all things, study the special requirements of his employer, and also the particular needs of his employer's establishment. Whatever his own fancies and desires may be they must be subordinated to the wants of the establishment he has to provide for, and parenthetically it may be here said, for the guidance of the young gardener entering on a situation that the rule is, Vegetables are the first consideration, fruit the next, and flowers the last. Exceptional cases may turn this rule upside down, or modify it in some degree ; but if they do they only make the rule more absolute. It is the duty of the gardener to at first find out exactly which is chief, and then arrange accordingly. Though he may make one point chief he ought to strive to do all things well. In order to fit him to do his work all the better he must keep himself abreast of the times by making himself acquainted with the best thoughts of the day, in all new ways of doing work, adopting such as are good, in new inventions of gardening necessities, being cautious about adopting any until quite satisfied that "there's something in them ;" in new plants and new ways of growing them, in new seeds, or roots, or manures, or implements, and indeed in all other matters which make up the economies of gardening. This must be done as a duty to his employer, and to show that he is "a workman that needeth not to be ashamed."

There are one or two qualities which might be, and ought to be, cultivated by the gardener, which would materially assist him in doing his duty to his employer. Energy and industry are understood to be guiding qualities, indeed they are indispensable ; and if to this the gardener can add concentrativeness, or that power of will and thought whereby a man can settle his whole mind on any particular duty he has in hand until he has finished it, this will contribute largely to successful labour. Tact and common sense are qualities which every born gardener has as a birthright, or ought to have, and if he has besides what the Americans call "gumption," which they say is more than tact and common sense (which is the gift of being able to do, and say "the right thing in the right way, at the right time") then the gardener will become more excellent as a man and a workman day by day, and, therefore, able more fully to do his duty to his employer.

Now let us come to the conclusion of the matter.

Not so much as to a master or employer will the true gardener do all this, though that position he will ever recognise and maintain, but, as man to man, "doing as he would be done by." Putting himself into his employer's place he will act towards him as he would expect his employer to act towards him if their positions were reversed, or, indeed, as he—the gardener—expects his employer to act toward him in their present relations. He will make his employer's interests his interests and serve him, "not with eye service but in singleness of heart." By so doing he will gradually rise in his master's estimation, and his own, in his profession, and will have that best of all friends a good conscience.—Excelsior.

THINNING GRAPES.

During the next few weeks the bulk of Grape-thinning will require pressing attention in gardens throughout the country ; and as it is work that cannot be delayed without causing a wasteful expenditure of the energies of the Vines carrying the crop, all good cultivators make a point of straining every nerve to keep the work from getting behind, and with this object in view contrive by some means to thin every bunch as soon as it can be clearly ascertained which berries have set properly, and may consequently be depended on to result satisfactorily. Grape-thinning is by many considered a tedious operation. Perhaps it is in some cases, but of all gardening operations it is the one I like the best when I have before me shapely well set bunches, some of which with good thinning and proper attention should make models of good form, while others bid fair to become masses of gigantic size. Each variety, nay each bunch, requires to be thinned according to the length of the footstalks and the size to which the berries grow. This helps to make the work the more interesting, and many pleasant hours have I spent in thinning the berries and studying the habits of most of the best varieties in cultivation.

No hard-and-fast line can be laid down as to the distance the berries of each variety should be apart when thinned, because the same varieties growing in different houses often differ considerably in the length of the footstalks, and in the case of Black Hamburghs much difference is apparent in this respect in Vines growing in the same house. The berries of those with the greatest length of footstalk should be left much closer together than those with shorter ones, for the simple reason that as the berries increase in size they will force each other upwards and outwards as far as the length of footstalk will allow. For compact bunches of Black Hamburghs when the Vines are vigorous an inch apart over the lower part of the bunch is about the right distance, but this distance should be gradually lessened as we approach the top of the bunch, as it is a common error to over-thin the shoulders with the result that as the berries swell, their own weight bearing them down, and leaves vacant spaces on the top of the bunches, which quite spoils their appearance.

The mistake of over-thinning is not always made at the first thinning, but when the berries are about half grown they rest upon each other and appear to be too close together to allow of their swelling to their proper size. Sometimes this may be the case, but my experience teaches me that this is just the stage at which they are the more likely to be over-thinned, in the case of those bunches that have long footstalks, as it is surprising to all but those that have closely watched them how the berries, as they increase in size, will gradually force each other into their proper positions till the bunch is filled out evenly from point to shoulder. It is without doubt a good practice to look over all Grapes when they have completed their first stage of the stoning process, to remove any berries that are not likely to have room to swell to their full size, but it must be done with caution to avoid the mistake I have already pointed out.

Madresfield Court, one of the most handsome of all Grapes both in bunch and berry, should be well thinned, but an inch apart is generally far enough, in consequence of the berries being oval in shape instead of round, and the same remark applies to Muscats. Gros Colman requires more space for its berries than any other Grape grown, as they not only grow to a large size, but the footstalks are nearly always short, 1¼ inch, and sometimes a little more is not too much. Gros Maroc requires only a trifle less space. An inch apart is far enough for Lady Downe's and Alicante. If this room is given all over the bunch, the footstalks being very stiff keep the berries in their proper positions till they are full grown. Shoulders are often formed on one side of a bunch. When they are small we remove them, as they only spoil the shape of the bunch and do not add much to its size. Double bunches, when large, we sometimes leave, as a good solid bunch of that description, with shapely tapering bunch on either side, look well on an exhibition board.

Tying Out Large Bunches.—For medium-sized compact bunches this operation need not be resorted to, as when properly thinned the berries will gradually form themselves into their proper positions and make handsome specimens, provided the outline of the bunch is good. With large bunches, however, the case is quite different, and unless tying out is practised to a considerable extent much of the bunch must be cut to waste, and many fine bunches of Gros Guillaume and Trebbiano, which might have been made into splendid specimens, have been thinned down until they have become very moderate in size. Having had considerable experience with bunches which when cut weighed from 5 to 12 lbs., I will describe our mode of procedure. Gros Guillaume sometimes produces bunches of enormous size with large spreading shoulders, and at others bunches that are well proportioned and solid in build, but in nearly all cases the footstalks are longer than those of any other Grape, excepting Buckland Sweetwater, which requires exactly the same treatment in the matter of thinning as Gros Guillaume.

To tie out and thin a large bunch of the last-named Grape requires much patience. Our first proceeding is to fasten a piece of raffia to the shoulders on the top of the bunch, bring them nearly up to a horizontal position, and arrange them at equal distances all around. It is not enough to have only one piece of tying material to support each shoulder, but these should be placed an inch apart all along the shoulder, otherwise as the berries swell their weight will weigh the point of the shoulder down and perhaps break the stem of the shoulder at the point where the tying material is

fastened. Having arranged (and tied to wires under the roof or the Vine shoots) the top tier of shoulders, we next tie up those underneath in the same way, taking care that these are brought up in a line with the centre of the angle formed by the top ones. The next tier is again angled with these, and so on till we approach nearly to the bottom of the bunch. The branches of course become smaller as the bunch tapers to the point. Some here will perhaps contain only four or five berries, but still they should be tied up to fill the vacant space that has been created by raising those above them. This is the principal point to be observed in the manufacture, so to speak, of large bunches, as by these means the berries are evenly distributed over as great an amount of space as they can fill up when growing to their full size. When this tying out is completed the most tedious part of the work is done, for it will be found that very little thinning of the berries will be necessary. A few small or imperfectly set ones may require removal, and possibly a few from the centre of the bunch, but it is seldom indeed that more than this is required. By following out these instructions many bunches that when set appear loose and straggling may be converted into large solid bunches. Trebbiano should be tied out in the same way, but a little more thinning will be required, because the berries often come in clusters, and the footstalks are not so long as those of Gros Guillaume.—H. DUNKIN.

AURICULAS.

I FEAR that I cannot agree with some of the criticisms of my friend, "D., *Deal*," upon the London Show of the National Auricula Society. He kindly invites "other estimates," and so disarms contention; but as I do not come with sword and spear, so there are no such weapons for me to lay aside, but I do think him under the influence of a few mis-impressions.

One which, on the whole, is no little mistake, concerns the selfs. That there was an undue preponderance of selfs in most of the stands—that selfs, as if they were an inferior, are the least advanced class, and that they are the most easily grown. For my own part I showed no greater proportion of selfs than I always do, but that is of little consequence. I am not the London Exhibition. But I think that the self so enriches and emphasises a group, and is so greatly the light, and warmth, and resting-place for the eye among the edged flowers, that without the self in full evidence the others would be but a dazzle of naked jewels, one sparkling against the brilliancies of the others, till only an accustomed eye could detect much variety among them. Popularly, indeed, the flower is known by its selfs, and many visitors here have said, "Well, except for those lovely 'selfs,' as you call them, I only see two or three sorts in the collection!" I do not, of course, maintain that the self is as powerful and masculine a flower as the perfect green-edge. She is pre-eminently of the gentler sex; a flower to whom some less outward adorning is given by her nature, and of whom, therefore, there is that less required. But I would accord her abundant honour in what may seem to some her humbler sphere, but which is, to those who are intimate with the difficulties of the self Auricula, a sphere anything but easy to fill with credit. The Southern schedule only demands so many dissimilar varieties in the stands, and while any marked disproportion of one class is a weakness, so that even the emerald green-edges might be overdone were it not for their scarcity; yet if one class has to appear more than another, then the self, in a rich range of her lovely colours, is the one to make the weakness look most beautiful and attractive.

But the self "is the least advanced class." How the least advanced? Is she the weaker vessel? Is she the inferior creature? Is she so little because she has not the "edge," which would be inconsistent with her distinctive character? Are her properties so facile that anybody can raise a good self? Truly nay to all this. Rather, here is the delightful deception of her beauty, in that it looks so simple and so easy of attainment, and is yet so hard. Herein is the charm of her advancement that you think you can win that homely calm-faced flower at your will; and, lo! you cannot. As my friend, "D., *Deal*," says "Whoever attempts to grow seedlings is pretty sure to get a large proportion of selfs among them." That is so, and here was the misconception of the old school florists that selfs came anyhow, to say nothing of the aimless wanderings of such as put their trust in chance-saved seed. Plenty of selfs, but what selfs? The most abject, marked, and painful failures. There is, thanks to "self" deception, no class of Auricula more difficult to raise than a really first-rate self. Those who trust to the sporting of edged-class seeds are not even in the way of it. An edged flower does not seem to know what a good self ought to be. I never knew a self worth anything that owed a filial relationship with the "bloated aristocracy (!)" of the "edges."

I have taken perhaps more pains with the self than with any Auricula. I think the best Auriculas I have yet raised are selfs, yet they have not "come spontaneous," but only from a pure and the best self parentage, and there was not much to work upon when I began. Now, the "advance" of the self has been from the notched petal to the fully rounded "rose leaf" one, and from the narrow paste of an even outline to the broad and circular, to petals of greater substance and breadth and smoothness, and far more richness of colour and texture. I think also that the self is proving worthy of another possible recognition of her advancement, that she should suffer from no mere class disability in competing for the proud position of the premier flower of an exhibition. A perfect self is a better Auricula than a less perfect green-edge. The edged one has more to do than the other; but if it does not do it then the other that has done all it could is the higher flower.

But this by the way. "D., *Deal*," considers that the self is cheap a'so, as being the most easily grown. Certainly the habit is often, but not always, the more robust, and the self will no more brook ill-usage than the edged flower will. She is like her brethren. To put, if I may, words of Shylock (*mutatis mutandis*) to the lips of the self:—"I am a Jew. Hath not a Jew eyes? hath not a Jew hands, organs, dimensions, senses, affections, passions? Fed with the same food, hurt with the same weapons, subject to the same diseases, healed by the same means, warmed and cooled by the same winter and summer as a Christian is? If you prick us, do we not bleed? If you tickle us, do we not laugh? If you poison us, do we not die? And if you wrong us, shall we not revenge?"

May I say, also, that "D., *Deal*," is mistaken in supposing that the self Laura is a shaded flower. The Laura of the London twelves was the same Laura (the same plant) in the Northern sixes a week later at Manchester; and it is vain to suppose that, had she been truly a shaded self, she could have escaped the strict eye of all the judges. Of the florist brotherhood, several of my most severe Northern friends saw Laura both at home and at the shows, and they all spoke to me of the pure beauty of the flower. It is simply impossible that a shaded self should pass undetected through this keen and varied scrutiny, and an exhibitor who ventured in the North with a shaded self would run grievous risk of making wreck of all his chances. There is only one body colour in Laura, and I can only think that in certain lights, the Lights (save the mark!) the Lights o' London Show, "D., *Deal*," may have caught a dismal ray through the flower from behind it, transmitted through the varying density of petal tissues, that may account for what he supposed was shady. But I look to-day on Laura faded, and she has died true to her pure colour, one of the highest virtues of the self.

But even more than at the fault with Laura I do wonder that my friend apparently never lingered, with even so much as a butterfly touch, over the charm and power of the black self Ebony. I do feel fond and proud of her; and at the Northern Show, where she appeared after all the wear and tear of London, Ebony was the best self I had, and was beloved of all who saw her. She is our first self in black yet obtained with all-round excellencies, with colour most happily shown off against mealed foliage, and with a golden tube and brilliant paste not excelled even by Heroine, in which they are properties so strong. I am sorry that the practised eye, taken in an illusion over Laura, should miss the lustrous beauty of dark laughing-eyed Ebony (it is only an innocent flower that can seem to smile in the colours of deep mourning). If I had a florist friend at my side he should write all this for me lest I should seem to boast, but indeed I do not mean to do so.

On the subject of heat, I must mention another complete mis-impression of "D., *Deal*." He infers that all the crumpled and curled petals, all the coarse and over-sized blooms, were "as if all the heat they had been subjected to had not been even enough to open them fully." Now, as a matter of fact, heat, as "D., *Deal*," evidently understands it, is the very "How not to do it after this fashion." Such heat will not so much as properly open an Auricula—the last thing it will do is to give it size. The Auricula pip that has been heated is a very different thing from the blustering blossoms of which "D., *Deal*," rightly complains. It is a small round thing, of little substance, colour, or duration—a bud that has dropped out into a flower which a good green pea or a threepenny-piece would utterly eclipse. It may even not go that little way, but remain much the bud it was until the throat gives way, and it is gone. I am nigh unto weariness in combatting this perhaps plausible but utterly incorrect assumption, that Auriculas which in a late season are shown wonderfully expanded and ready, or hopelessly rough and over-grown, are obtained by forcing the plants by the same means into the opposite extremes. I am bold to say that no Auriculas that win a place at the great shows have been grown in heat as that term is generally, and I think by "D., *Deal*," understood.

As an illustration of what is true and safe on this vexed question may I repeat my own experience and practice? The

Auricula houses here have no hot-water pipes or flues, though they have the advantage of a full south exposure, and of the back wall being built against the solid earth, and so impervious to frost from behind. If need be, the plants are so shaded as to leave the sunshine playing upon the back wall all day, and so supplying a gentle warmth at night, which is taken care of by strong sheets of sacking over the glass roof and sides. When the plants are forward enough, the wall is allowed no sun, and the lights are left open far into a fair and balmy night. If I much need a plant or two that may require more generous warmth to perfect the bloom I may take it for the last few nights to the cool Orchid house, at a maximum of 55°, a temperature no higher than that of a pleasant evening out of doors. I never take them into the intermediate house or the still higher Orchid temperature.

Indeed, when heat is spoken of as applied to Auriculas, it means practically a heat no higher than such as these plants might naturally expect in a properly genial spring. When the weather denies them that at a critical time, why, I apologise to them for the weather and try to make it up to them, not so much by putting heat in as by keeping cold out. It is perhaps at least worth mentioning this, because from reading some deprecations of "heat" for Auriculas, it might be inferred that some favoured plants were treated to the Cattleya house, or even to an evening with the East Indian Orchids, or, if kitchen company were congenial enough, to the early Cucumber frames. But I do not either see from theory, or find by practice, that a warmth equal to a kindly spring temperature is other than helpful to the Auricula when close upon its time of bloom in a bitter season. Conserving of natural heat by early closing and coverings on cold nights, is by far the best way, and a heated flue is by far the worst, in fact not safe.

The Auricula will not bear any heat of an untimely or unnatural degree. An artificial temperature of 70° will cause the buds to open small, and one much over that will prevent the flowers from opening at all. The pollen is prematurely shed, and the tube and throat are enervated. If there be a natural shade temperature of 65° or 70° in spring it does not destroy the flowers, but they live very fast under it. Thus the cry that the Auricula growers of to-day use heat that would melt the spinal marrow of their great forefathers, ends in the little wool that after all we are but as the nurse to Nature, and treat our plants but as she would have them treated if she could, "weather permitting."—F. D. Horner, *Burton-in-Lonsdale.*

VEGETABLES FOR EXHIBITION.

DWARF FRENCH OR KIDNEY BEANS.

These are usually available before the Scarlet Runners, and in June and July have good weight in a collection of vegetables. At many shows prizes are also offered for a single dish, and in any case they well repay for good culture. Unlike the Runners they are not continuous bearing, and consequently the sowings must be timed so as to have the pods at their best when most wanted. As a rule the seed should be sown about eleven weeks before the produce is to be shown, but as these also transplant readily from pots or boxes, a few days will be gained by sowing under glass. For the June shows, and any held early in July, it is advisable to grow them under glass nearly, or quite, all the time. A few plants in a frame disposed on a gentle hotbed, or in a pit or frame in succession to early Potatoes, will, with very little trouble bestowed upon them, yield superior pods. Raise the plants singly in 3-inch pots, and in due time plant them in good loamy soil 18 inches apart each way. They will require staking, and ought not to perfect many pods at a time. For the July shows they may be started in a frame, this being removed or the lights taken off when it is seen the crops will be quite early enough without any further protection. In some districts they may be had good from south borders early in July, but for later shows a sunny open spot better suits them. A fairly liberal dressing of solid manure ought to be well mixed with the top spit, this encouraging the roots to remain within reach of the warmth they appear to greatly need. The roots should be fully 2 feet apart, the seed sown thinly, and the plants eventually thinned to 10 or 12 inches apart. They should be moulded up early, and staked before they fall over. It is only the thinly grown erect plants that produce perfectly straight and symmetrical pods, and these, let me repeat, ought not to be heavily cropped. Successional sowings ought also to be made, as there is no certainty about the duration of a crop. During dry seasons they need plentiful supplies of water and liquid manure, but as a rule on heavy and medium soils summer mulching is all that is needed. Canadian Wonder is, on the whole, the most popular for either frames or the open air, but I rather favour the Negro Mammoth Longpod, this yielding abundance of straight dark green pods.

CAULIFLOWERS.

A friend of mine who grows wonderfully good Cauliflowers is of opinion the secret of success may be summed up in three words—viz., "plenty of manure," and there is no doubt he is quite right, for it is useless to attempt to grow good Cauliflowers without plenty of manure. This, coupled with deep cultivation and good attention in the supply of water as required, and plenty of liquid manure, is necessary, whether the produce is required for home use or for exhibition. For the early shows or those held in June the Dwarf Erfurt Mammoth, Mont Blanc, Early London, and Walcheren are all suitable, the plants being raised in the autumn previous and wintered either in handlights or cold frames. These, if duly planted about 2 feet apart each way, will give fine clean heads, which, if properly blanched, much improve the appearance of a collection of vegetables.

For the July shows Veitch's Pearl and Sutton's King of the Cauliflowers are good, the plants being raised in the autumn (seed sown late in August) in common with the earlier varieties, and similarly treated. They form a natural succession to these, and both may be grown to such perfection as to almost equal the popular Autumn Giant. Early in August it is possible to have Eclipse fit for exhibition, and this may be truthfully described as an early form of the Autumn Giant. To have this variety or Veitch's Autumn Giant by the middle of August the plants must either be raised in the autumn previous, or else the seed must be sown in gentle heat early in February. In the latter case, when the seedlings have developed the first rough leaf, they ought to be pricked off, four plants being put round the sides of each 4-inch pot. They should then be set on a sunny greenhouse shelf close to the glass, there to be kept and well attended to until the first week in April, when they should be hardened off, and a fortnight later divided and planted out 3 feet apart each way. When growing strongly these or any Cauliflowers required for exhibition should receive a mulching of partially decayed manure, and in dry weather liberal supplies of liquid manure. Here let me add that if fifty plants cannot thus be favoured be content to grow half that number, and "do" them well. The watering should be no mere driblets, but each plant ought to receive at least a 3-gallon can of water or liquid manure at a time. This will suffice them for ten to fourteen days, according to the weather or the nature of the soil, when more must be given. It must not be thought that no further trouble is needed. Remember that caterpillars soon disfigure the hearts, and if the latter become green or open badly they are unfit for exhibition. Just as the "curds" are forming the caterpillars become very troublesome, and must be closely looked after and destroyed. Hand-picking is the only remedy, and the plants ought to be examined two or three times in a week. The blanching, a detail often neglected, ought to be commenced a fortnight previous to the early shows; and if either Cauliflowers or Veitch's Autumn Broccoli are wanted for the November shows these should be taken in hand a month or more before the date of the show. The leaves must be well brought up together, and kept so with the aid of a strand of matting, the aim being to thoroughly exclude the light from the heart. Unless the light can be so kept out greening occurs and the curds "break" or fly open, it may be several days before the date of the show.—Exhibitor.

KEENS' SEEDLING STRAWBERRY.

This fine old favourite variety is now seldom cultivated anything like so extensively as it deserves, and in some places it has lost favour altogether, or is ousted by newer varieties, which at first are often considered superior, as owing to the extra attention they receive when fresh to hand they appear at first an improvement, and I confess that I am not exempt from this weakness. There are, however, fortunately many gardeners that wisely cling very tenaciously to the old tried varieties, and safely depend on them for their principal supply. An excellent example of this practice is carried out in the princely gardens at Penrhyn Castle by Mr. Speed, who had his shelves at Eastertide laden with fine dark crimson fruit of the above variety, presenting a sight rarely met with. I do not remember to have seen such handsome fruits so early in the season before, and being the true old Keens' Seedling, the quality is guaranteed. Mr. Speed resorts to no mechanical dodges to secure a good set, but depends on good cultivation, and by judicious watering and ventilation he secured rich colour and large size, evidently testifying their grand quality and capability to endure their 250 miles journey to London without serious damage.—J. H. Goodacre.

PAULINE AS A STRAWBERRY FOR FORCING.

Amongst the instructive notes which have already appeared anent forcing Strawberries, I have been somewhat surprised to see no notice taken of Pauline as an early variety. It may be that its peculiar shape is not liked, but beyond that I cannot account for its neglect, as it colours well, fruits freely, and for an early Strawberry the flavour is very good. In that respect it is so much appreciated at the table that

my employer has wished me to grow no other early sort. It has a stronger tendency than any other Strawberry with which I am acquainted to start off with the leading bloom extra strong, and this it maintains throughout, the fruit being larger and better than the succeeding ones. I tried the effect of pinching off this leader, but beyond losing the best fruit there was no noticeable difference, as in either case with liberal treatment all the fruit attained a very fair size. Another point in its favour is that from its habit of growth it can be grown in small pots, in fact it succeeds better with us in 5½-inch pots than in any other.—M. D.



ROSE SHOW FOR DURSLEY.

At an influentially attended meeting held in the Chantry for the purpose of starting a Rose Show in the neighbourhood, it was unanimously decided to hold the first Show in the cricket field on the 4th of July next. W. J. Phelps, Esq., was nominated President of the Society, the Rev. Nigel W. Greesly and several gentlemen in the vicinity being appointed Vice-Presidents. The Hon. Secretaries elected were Mr. H. J. Small and Mr. E. W. Cooke, while the office of Treasurer will be undertaken by Mr. V. K. A. Bowie. A representative Committee was also formed, having Mr. Owen as Chairman. There are many amateur rosarians around Dursley, and the Cotswold Roses have already more than a local reputation. This, added to the well known beauties of the locality, point to a success, if the weather prove favourable, which will doubtless make it an annual gathering of some importance. A schedule will be framed and issued at an early date.

ROSES IN WINTER.

To produce Roses in any quantity during the months of December and January it is necessary to devote a house entirely to their culture. Those with more limited means at their disposal need not despair of having blooms during that period if they follow intelligently the advice here given.

I shall not enter into the structural details of the house farther than is necessary to make my cultural remarks intelligible to those who have no knowledge of the subject. Rose houses are generally constructed so that they have a very presentable appearance. This may add to the enjoyment of those who wish to visit the house frequently to watch the delicate buds grow and develope. This is all that flagged floors and other such arrangements are good for. Such houses are not well suited to the Rose, they are frequently too dry. At certain seasons it is very difficult, with liberal ventilation, to maintain the necessary amount of humidity in the atmosphere, and then red spider, aphides, with mildew, often have their origin. The walks should be formed of ashes or gravel. A span-roofed house is the best, although a lean-to will do very well with a southern aspect. The first should run north and south. A lofty structure is not needed so long as it is sufficiently wide to accommodate a central bed with a bed on each side. The borders should be deep enough to allow of drainage and about 18 inches of soil. Whether the beds be above the ground level, or the same level as the ground, is very much a matter of choice and locality. It also depends upon the structure. If low, and the locality is well drained, then they are better on the same level as the ground. Whether the natural soil be removed is another question that must be decided by each cultivator. If the soil is drained and suitable for Roses outside it would be unwise to remove it. Borders or beds for Roses when grown indoors are frequently overdrained, and this is one of the reasons they suffer so generally from mildew and red spider. Even supposing the plants are kept free of these pests more water is poured on to the borders than is good for the well-being of the Roses. Large quantities of food that should be appropriated by them is carried down the drains. Such borders soon become unfertile, in many instances before cultivators are aware of it, and puny growths follow.

What ventilators are arranged should fit closely, or injury to the young tender foliage will result from the admission of cold draughts. The lights or roof of the structure must be portable, so that they can be removed at a certain period of the year. This is necessary to ripen and mature the wood, to insure an early but a complete rest. Under glass without such provision is made Tea Roses will persist in growing, particularly towards the close of summer, and would flower profusely during September, through the following month, and well on into the next in many seasons, but this depends entirely upon the summer treatment they receive. Plants that flower in autumn are useless for the purpose we have in view, and, therefore, if planted out the house must be so constructed that they can be fully exposed when it is deemed necessary. Those who grow a few only for this purpose may have them in pots, and they will be able to manage them successfully by placing them outside, so that the object pointed out can be attained.

Those who wish to have Roses during the winter must abandon the idea of either planting or growing a number of varieties in pots. One variety only should be grown, or two at the most. Safrano is decidedly the best winter flowering variety at present in cultivation. It is the variety that is so largely grown and imported by the French. Next to this is Isabella Sprunt, but the first will produce more buds than the latter. The last is equally as good a bloomer in the autumn, and can scarcely be excelled during the months of October and November. It will flower most freely again in February. It is, however, a good companion for Safrano, and should be planted in any house specially set apart for winter Roses. It, like Safrano, has a good constitution and grows vigorously; both will bear winter forcing for many years without exhaustion. In planting a house for this purpose or for growing in pots, I should have one Isabella Sprunt for every three plants of Safrano. In advising the culture of these two I am not overlooking the claims of Niphetos, which is unquestionably the best market variety that can be grown, because its blooms realise the best price, but it does not flower with that same freedom during the winter as Safrano does. It is of weaker constitution altogether, and therefore incapable of bearing the severe strain of early winter forcing in succession. At that period the blooms only come small and demand no better price than the larger buds of Safrano, which during the winter is highly esteemed in the market as well as in the dwelling room. The one, Safrano, is fragrant, and the other, Niphetos, is not, or it is so faint that it cannot be detected by many at that period of the year.—Wm. Bardney.

(To be continued.)

SUCCESSFUL ROSE-GROWING.

I should, with your permission, like to record an instance of the successful culture of some Maréchal Niel Roses in the garden of J. W. Larking, Esq., J.P., The Firs, Lee. A year or two ago Col. Edgar Larking, a son of the gentleman named, being very fond of Roses, thought he would like to gratify his tastes in this direction by building a house purposely for growing Tea Roses. The house, a span-roof, 50 by 12 feet, was accordingly built of light sashbars, with grooves on each side to receive the glass, which was bedded in with putty. The roof has a sharp pitch and the eaves come down to the ground level, the whole resting on an angular wall plate on a substructure of concrete. Down the centre of the house is a sunk path 3 feet wide, and on each side separated by a 4½-inch brick wall, a bed about 4 feet wide and 3 feet deep. In the bottom of each of these beds there is about 6 inches of brick rubble, this overlying a bed of pure gravel, and insuring the most perfect drainage. The soil for filling the beds was composed of two-thirds top-spit, turfy loam, partly marly and partly of a fibrous lighter nature, and one-third of well decomposed pig manure, charred vegetable refuse, and road scrapings. This was turned over several times during a period of two months and then introduced into the house.

In the autumn good specimens of all the leading varieties of Teas were obtained worked on the Manetti stock, and these were duly planted and pruned, some being intended for covering the roof and others as dwarfs. Strange to say, though every attention was paid to these, and not allowed to be unduly excited into growth, they did not succeed as they might have done. The growth the first year was not at all robust, and although close pruning and every attention was paid to them the second year their progress was not of such an assuring character as to warrant trying experiments with them for another year. It was ultimately decided to discard most of the varieties, and in future to grow the Maréchal Niel on standard Briars exclusively.

The soil was examined by several competent growers and pronounced in every way suitable for Rose culture. Some said the absence of bottom ventilation contributed to the non-success of the plants, but even after a short trial of admitting bottom air by removing the putty and allowing the panes to slide up and down there was no perceptible improvement.

In the autumn, then, good vigorous standards of Maréchal Niel were planted on one side of the house. No fresh compost was added, but special pains were taken to render the soil as firm as possible about the roots and the bed generally, so as to encourage the production of stout vigorous growth. The bed was mulched with decayed manure, and all through the winter plenty of air was given, so as not to excite the buds into premature growth. In February each of the strongest shoots were pruned back to the best placed outward bud near their base, and any smaller than a quill pen cut out entirely. In due course the buds gave birth to sturdy shoots, and where more than one had formed on the spur the weakest of them were rubbed off. Throughout the summer the shoots grew vigorously under the skilful care and attention of Mr. E. Trollope, the able gardener at The Firs, and he is now rewarded for his pains and skill with shoots measuring, in some instances, upwards of 8 and 10 feet long, and these covered with blooms in all stages of development. At the time of our visit a few days ago we counted no less than 1500 blooms open, and as others had been gathered and a large number were still in the bud state, it will, I think, be admitted that the plants have bloomed uncommonly well. The foliage is of the healthiest description, perfectly free from insects and mildew; and moreover, evident pains have been taken by Mr. Trollope to avoid overcrowding and insure the proper maturation of the wood by thinly disposing the shoots over the trellis. It must be gratifying to the latter, and to Col. Larking, to see this signal success coming as a reward for the pains and expense bestowed on the culture of the plants.

Before closing I may add that Mr. Trollope is a firm believer in close pruning, and when I state what he proposes to do with the plants under notice in the way of pruning, I shall probably frighten those who are afraid to use the knife or scissors on plants or trees. It is the latter's intention to cut all the shoots back to the best placed bud situate within 6 inches or less of the stock as soon as the plants

have ceased flowering. This may appear to be pruning with a vengeance, but it is not so. It is owing to the absence of vigorous pruning like this that so many Maréchal Niel Roses fail to retain their healthiness and capacity for producing not only abundance of blooms, but of good quality also. Directly the Roses are pruned they will be encouraged to break freely, and to produce even stronger and better growth for next season's flowering than they have this.

Samples of blooms have been sent you, I believe, Mr. Editor, and you will consequently be able to judge as to their quality and the soundness of Mr. Trollope's practice in Rose culture.—A KENTISH GARDENER.

[The blooms both in substance and colour are all that can be desired. We have also seen the plants, which are most creditable to Mr. Trollope and his predecessor, Mr. T. W. Sanders, who planted and tended them in their early stages of growth. We have not seen better results after one season's growth than as represented by these Maréchal Niels on Briar stocks.]

BELGIAN WORK AND WAYS.

MORE than the usual number of "Britishers" will probably visit Belgium this year on the occasion of the general Exhibition that is to be held in Brussels through the summer. In connection with that display of the world's goods a series of flower shows will be provided on the dates mentioned on page 339. One of these, according to the programme, appears to be of an extensive character, and may be expected to be fairly representative of Belgian horticulture at that period of the year. The garden-loving public who contemplate a trip across the water will naturally arrange the time when a floral exhibition is held in the beautiful city referred to. A short sojourn in Belgium is very pleasant for persons who have not yet travelled beyond their native shores, and also for those who have. To the first the experience will be totally new, while those who have had a previous glimpse will "find their way about" more readily on a revisit, and on that account their touring will not be the less agreeable. The facilities for travelling are now so great, and the benefits of a change of scene and society so fully recognised not only by the "faculty," but almost by everybody, that ever-increasing numbers indulge in short or long continental trips, according to the time and means at disposal, and it is well known by those who occasionally take long journeys at home that they can go "abroad" at less cost than by crossing from one side of the land to the other within our seagirt isle.

Broadly speaking, hotel charges are somewhat lower in Belgium than in England, with the exception that the continentals "put it on" for soap when travellers do not "find themselves" with that indispensable article of civilisation. As regards railway travelling, second class fares do not much exceed third class in England, nor ought they, for the carriages are not nearly so comfortable; and Englishmen who are in the habit of "going third" at home because there is not a fourth, seem inclined to raise themselves a step in the social scale abroad, and loll in second class carriages even if they do not luxuriate in "firsts." However, they will find polite civility everywhere, and as the railway fares are printed on the tickets the matter of charge is simplified when the value of the "pieces" is understood, and this is stamped on most, if not all of them, in francs and centimes, a hundred of the latter making one of the former; so hotel and other bills are in two columns simply, instead of the more complex and familiar £ s. d. When an English gardener changes £2 or £3 sterling into Belgian small silver coins, he seems to have a pocketful of money, for he obtains 25 francs, that remind him of shillings, for a sovereign, or fifty coins of half the value that he can fancy are sixpences. There are also 2 franc and 5 franc pieces in silver, and 5 centime and 10 centime coins in copper, and the latter also in smaller white metal. These for practical purposes correspond to our halfpennies and pennies, but are not quite of equal value. All this is very familiar to many readers, but not to all, and as there are always gardeners going to Belgium for the first time these simplicities will be indulgently passed by those who know them for the sake of those who do not.

It is somewhat of a mistake in writing to suppose that everybody is acquainted with the trifles that pertain to a subject, hence so much soaring over the heads of those who really need the precise information that is left out. Can it be that some of those who essay to enlighten are fearful lest the plainness of their teaching should be taken as the measure of their own capacity? If so, the sooner such vain notions are cast overboard the better into the sea of crude absurdities. I am practising what I preach, so just one word more about money. An English sovereign is a passport everywhere. It is more eloquent than the tongue often, and better understood in a foreign land, while any Belgian cabman, so far as I know, will take an English shilling in lieu of a native franc without grumbling; but if you in ignorance do not pay the coachee quite enough, and he does not understand your language nor you his, he will contrive to impress on you by his attitude what he means, and it is more likely than not that his blandishments will extract from you a trifle more than he expects. You will then have the satisfaction of seeing a man happy. But if these useful members of society once get hold of money they have a habit of keeping it, and of course they get hold when they can. If a likely passenger is seen landing and hails a cab, a second man is apt to jump on the box and assist in a general way if he can find anything to do; but if when arriving at the journey's end you pay a little extra to the coachee under the impression that he will pass a moiety to his friend, you may depend on it he will not, or at least that is the idea conveyed in expressive gesticulations by the attendant, who is most reluctant to leave you. His attachment seems almost touching at that particular moment, but tip him half a franc and he smiles his adieu, and I believe would know you again and greet you joyfully five years hence if he caught you stepping on the shores of his native land. The point, then, to remember is this, if a footman out of uniform *will* join the coachman to see to your things, the plan is not to pay one what is enough for both, as you will have to pay the other all the same unless you wish to keep him near you for a longer time than may perhaps be convenient.

No one should cross the water without knowing where to go. Wandering about hotel hunting is a thankless task, and does not always end satisfactorily, and it is best to secure "quarters" before leaving home. A choice can be found in the continental Bradshaw, which is useful to have when moving about. The chief cities of Belgium are not far apart, an express train running between any two of them in about an hour, so a great deal may be seen in a short time. There are various ways of reaching the busy little kingdom, but only one method—crossing the water. The timid who hesitate to do this must wait till the Channel tunnel is open, and when that will be no one knows, for there does not appear to be any great hurry about it. I for one would rather go over the sea than under it, and a journey from London to Antwerp is as safe as one from London to Manchester. Of course a person crossing the water may be a little upset, especially if he invites an attack of *mal de mer*, and perhaps if he does not, but there is a great deal in anticipation. If a person thinks he will be "bad," and feels as if it were "coming on" before he goes aboard, he may not have long to wait; but if he neither thinks nor cares anything about it, the probability is that he will pass over as right as the mail.

On my last journeys out and home again, not one out of the many passengers, so far as I could see and hear, suffered the slightest inconvenience, and most of them appeared to have very good appetites. This reminds me of a table episode. Not many persons who know what a good dinner they can have in the saloon of a Great Eastern steamer for 3s. 6d. will waste time in dining ashore before the evening departure from Antwerp. At the table was an American gentleman not in the least taciturn. He wanted "more Peas," which are not usually very plentiful in April, and because the dish was getting empty he somewhat rashly concluded there were no more aboard, and talked loudly of "imposition," and kept talking just long enough, for at an opportune moment when about concluding his peroration, a dish containing enough for ten people was quietly set before him. He was "done," and knew it, as everybody else did, and perhaps because he knew that too his appetite seemed to leave him, and he thought he would go on deck and "have a smoke." There is no stint of food on a well appointed steamer, for there, if anywhere, the best seems most abundant, and it is quite certain that for once in his life our lively voyager had enough Peas.

There is not much of Belgian work and ways in this part of the narrative, and, bar the Peas, little in connection with gardening. Never mind. Everything cannot be told at once, and besides, I once wrote some gossipy out-of-the-way articles of this nature, and plenty of evidence was forthcoming that they were at least as acceptable to a number of readers as dry details about digging and planting, watering and ventilating, keeping up heat and keeping down insects. The severely practical and sadly sober-minded who are only happy with their noses on the grindstone, can skip what they do not like in this column and turn to the solid fare they will find in others before and after it. A little light reading is a relief to many after a hard day's labour, and as some of them have fully too much of land working they will not object to be taken to sea for a change, and to learn something of what they may expect to see and experience when they set sail for a short trip to the Continent. Desiring to see the most abroad in the shortest possible time from home, I, like many others, leave London at 8 P.M., rush down to Harwich, step on board the steamer sailing at 10, and landing at Antwerp after breakfast next morning, ready for a day's ramble. By writing or wiring the steward beforehand you will find your berth reserved, this avoiding confusion that arises when a crowd of passengers are clamouring for room, all wanting attending to at once, and everybody first. The steamers are large and most comfortable, equalling in every way well appointed hotels, the electric light in every compartment, while the attention of the officials to the wants and even the foibles of passengers leaves nothing to be desired. All do not "turn in" at once, but some want this and others that, all appearing to get what they wish, then a march on deck, long or short, according to the weather, and one after another vanishes. The last trip was as smooth and quiet as a first-class railway carriage, and the passengers slept so well that not one was on deck to see the sun rise majestically as if out of the water. I was the first on deck for the ozone, and Flushing was in view. We had crossed the sea without knowing it, and henceforth our course was up the Scheldt, the river pilot twisting his way about till the famous cathedral spire of Antwerp was in view, and which we passed, "slowing" for the pier, an hour afterwards, every watch on board that was right on leaving home and had kept good time on the way, being twenty minutes behind.

If you want to go to Ghent from Antwerp you land close to the station of the Pays de Waes line, only the start is on a steamer for crossing the river. If you wish to go to Brussels, it will be a wonder if a train is not waiting alongside. We do not step into trains in Belgium, but climb up. The Belgians head us in some things, especially by twenty minutes in the morning, but they are behind us in others, and have not yet provided raised platforms, and it is quite a struggle with some passengers to take their seats. I took mine in a cab, and

made my first call on an esteemed and long proved friend, Mr. Charles Van Geert, one of the most substantial and respected of Belgian nurserymen and genuine of men. Both with himself and his son, who actively conducts the business, I spent a few pleasant hours, and with the latter had a run into the country, forty minutes by train, to the most interesting nursery of its kind I know, and of which it would be difficult to find its equal as regards arrangement and the richness of its contents in the form of deciduous trees, flowering shrubs, and Conifers. It is a veritable arboretum, so tastefully disposed as to form a delightful pleasure ground to the handsome château which has been rebuilt as a summer residence for the family and friends. It is *the* nursery on the Continent to which planters of hardy ornamental trees turn, and is of European fame. A consignment of Conifers was being packed for Germany, every specimen fit for an exhibition, and large as some of them were there could be no thought of one of them failing to grow when planted with ordinary care. Conifers are replanted at Calmpthout at almost all seasons of the year, and the special care that is bestowed on them ensures their safe removal. The soil is of a sandy nature, and every excavation that is made for a plant or tree, large or small, is lined with chemically prepared leaf mould, into which the roots entwine and divide, clinging to it in the form of a wig-like mass of fibres. It is an excellent idea well and systematically carried out. The nursery has extended greatly during the past few years, and additional land is purchased for improvement. This will be scientifically and experimentally conducted both as regards manures and crops for a few years, that may be of benefit to Belgian agriculturists who are *not* "advanced." It will be a school of instruction under the inspection of an official from the agricultural department of the State, and crops and methods of culture will be tried that are at present not common in the kingdom. Eventually the land will probably be planted with nursery stock when a further extension is needed and the soil is brought into the best condition for its reception.



Fig. 48.

The district it appears forms a happy hunting ground of the cockchafer or May bug (Melolontha), also of the leather jacket grub, the larva of the Tipula. These are most destructive and difficult to extirpate. For keeping them in subjection their natural enemies, Starlings, are wisely encouraged and protected. A hundred nest boxes (fig. 48) had just been erected in different parts of the nursery. These are like miniature dog kennels, a foot or so long, with a round hole in the end of each near the top, fixed about 15 feet above the ground on poles inserted in it. They are promptly taken possession of by the birds, which increase in numbers and do their natural work better than it could be done in any other way, and are of immense benefit to the district. One larger box was made some years ago in two storeys, with holes giving access to the upper and lower rooms, but the birds would never enter the lower, so each pair have now a small one-storey tenement to themselves, and the plan answers well. These boxes are an interesting feature of the grounds and decidedly useful.

There is little left of the Antwerp nursery, the home of the family; only what was the old garden of the original proprietor is retained, with a few glass structures containing a good stock of Palms and Camellias. The present owner bought a good deal of surrounding land some years ago, when it was cheap, being beyond the fortifications, and in those days the kingdom was less settled than now. Looking ahead, Mr. Van Geert also bought land in the country, and eventually the time came when the expected happened, and the home nursery was brought within the new and formidable lines of defence. The growing commercial prosperity of the city increased the value of this land enormously, and slice after slice was sold for building purposes. Fine streets now occupy the site and show association with it, and record family sympathy by their names—Van Geert Street, Horticulture Street, Linnæus Street, Dodoens Street, and at present a new street is being built by Mr. Van Geert's sons and daughters. So does the old order of things pass away and is succeeded by the new. But the name of the man who has done so much and so well is built firmly in the foundations of the city, and will survive the storms of centuries.

In the large and substantial house of Mr. Charles Van Geert, jun., built by his father a few years ago, is an interesting memorial window representing the portraits of the earlier Van Geerts, one, the father, I think, of the present representative head of the family, the other of his relative, Mr. Jean Van Geert, who was a pioneer in the horticultural industry of Ghent, and whose portrait appears in the May number of the *Revue de l'Horticulture Belge*, that contains a complete history of its horticultural society and famous exhibitions, admirably written by Mr. C. de Bosschere and appropriately published, with an account of the last great Show on the day it was opened—a smart piece of work on the part of Mr. E. Pynaert Van Geert and his able coadjutors. A feature of one of the rooms of the house referred to has perhaps been mentioned before, but forgotten. Over a handsome fireplace, instead of the familiar pier glass in which you look at yourself, is a large plate glass, through which you have a full sweep of the street as you sit round the fire. It was a conception of the owner; but there is another arrangement similar, and anterior to it. Some years ago, when Dr. Hogg was building in Sussex, the idea occurred to him to have a view of the beautiful country from the room over the fireplace, and it was carried out, the smoke from the fire being conducted through side flues. The arrangement is novel and agreeable. These coincidences of invention are worth recording whether there are more of the same kind or not.

I think I saw enough in one day in and outside Antwerp before going on to Ghent, and have said enough at one sitting and for one reading; but on returning I called on a great amateur cultivator residing in the famous old city, and shall perhaps be able to say a little more about Belgian work and ways another day.—A JUROR.

Notes & Gleanings

EVENTS OF THE WEEK.—Exhibitors will have a rather busy week, especially those who like to arrange for a succession of shows in a few days. On Saturday, the 12th inst., the summer Show will be held at the Crystal Palace, Sydenham; on the following Wednesday (16th inst.) the first of the Royal Botanic Society's summer Shows for the present year will be the great event; and on the next two days, Thursday and Friday, the Royal Horticultural Society's Exhibition in the Temple Gardens will attract attention. The Whitsuntide Show at Manchester will also be opened on Friday, the 18th inst.

—— AT a general meeting of the ROYAL HORTICULTURAL SOCIETY, held on Tuesday in the Drill Hall of the London Scottish R.V., Harry Turner, Esq., in the chair, seventy-five candidates were duly elected Fellows of the Society.

—— THE WEATHER.—"In Scotland," says "B. D." "the first week of May has been showery, boisterous, and rather inclement. On Wednesday, the 2nd, heavy showers of sleet and hail, accompanied by thunder, occurred in some districts. There has been no frost, and vegetation progresses but slowly." The weather in the south has been bright and mild with several extremely fine days and occasional showers. Vegetation is advancing rapidly.

—— WE have the pleasure to state that MR. JAMES DOUGLAS, The Gardens, Great Gearies, Ilford, succeeds the late Mr. J. Woodbridge on the Council of the Royal Horticultural Society. It would not be easy, we presume, to find a better representative of British gardeners. Mr. Douglas has been a Fellow of the Society for many years, and has served on the Fruit and Floral Committees, and therefore in that respect his claims, though not advanced by himself, could not be overlooked for the distinction conferred.

—— MR. HYDE CLARKE has the following paragraph in "Notes and Queries" respecting the ORIGIN OF THE ROYAL BOTANIC SOCIETY —"The founder of the Royal Botanic Society was Mr. Philip Barnes, F.L.S., of Norwich. Having learned from an official of the Woods and Forests that the lease of Jenkins' nursery grounds in the Inner Circle was about to fall in, he planned the Society, and by great labour accomplished the undertaking. I was one of his earliest supporters, and am now the father of the Society, as my neighbour, Mr. G. G. Hardingham, retired from the Committee. This year is the jubilee year, and it is to be hoped a bust of Philip Barnes will be placed in the museum of the gardens. The first Secretaries were Mr. J. de Carle Sowerby, the naturalist, cousin of the founder, and Mr. P. Edward Barnes, B.A., his son."

—— WE have had the pleasure of inspecting Mr. McIntosh's BULB BEDS AT DUNEEVAN early in the week. The Hyacinths were passing their best, but the display was the finest we have seen either there or elsewhere. Between 4000 and 5000 spikes, not a few of them of exhibition standard, two-thirds of the varieties single, grouped about 6 inches apart, and each supported with an almost invisible galvanised stake, and the colours effectively mixed, produced an effect of the most pleasing and satisfying description. Early in the season the margins of the beds were bright with Crocuses, the arching foliage of which forms a graceful foil to the Hyacinths. The Tulip beds were very brilliant. The varieties which are found to be the best for massing are Chrysolora, pure bright yellow; Belle Alliance, rich crimson scarlet, surpassing in vigour and effect Vermillion Brilliant; Rosamunde, rose and white,

very chaste; Molière, purplish lilac, with orange base; and Wouvermanns, rich purplish magenta; five hundred plants in the bed having a remarkable effect. Some of the Tulips have been a little checked by the prolonged cold, but notwithstanding the display is very rich and good. The Rhododendrons promise to flower well this year, and at present an unusually rich orange form of Berberis Darwini is in full beauty. In the kitchen garden the blossom on most of the pyramid trees in the choice collection of fruits is abundant, and the high keeping of the garden reflects the attentive and continuous care of Mr. T. Taylor, the gardener. Unfortunately the prolonged indisposition of Mr. McIntosh prevents his fully enjoying his garden. He has not been able to visit London for five years, but has the advantage of weekly calls from his good friend and neighbour Mr. G. F. Wilson, and it would not be easy to find more earnest patrons of gardening than these two gentlemen are, whose names are so familiar in the horticultural world.

—— An excellent idea of the beauty of well-grown Caladiums can be gained by an inspection of the large collection in Messrs. Laing and Co.'s Stanstead Park Nursery, Forest Hill. Some dozens of varieties are represented of all sizes, from the dwarf red and green minus erubescens and the white variegated argyrites, a few inches high, to giants with leaves 20 inches long by 15 inches wide. They are most diversified in colours and markings, some having white semi-transparent leaves of great delicacy, others are boldly veined with red or crimson, or green, or white, and some are most peculiarly spotted, blotched, or marbled. The range of variation is astonishing, and as foliage plants, when grown in an open sandy soil, a high temperature, and well supplied with water, there are few plants can equal these during the early summer months.

—— Active preparations are being made for the Tuberous Begonia Exhibition both indoors and out. About 100,000 seedlings have been dibbled out in pans or boxes, and when large enough and the weather is safe—*i.e.*, early in June, the plants will be placed out of doors. A space of ground of about an acre has been cleared for these, and when arranged in their respective colours in long borders and bearing their large flowers, the Stanstead Begonias will be amply worth another visit.

—— Parliament Square, Westminster, has at the present time a very bright floral display, two dozen Beds of Tulips being in their best condition. There are twenty-four beds, circles and oblongs alternately, and each bed is planted with one variety, the colours in the adjoining beds being well contrasted. The varieties are Comte de Mirabeau, white; Globe Rigaud, purple feathered; Molière, purple; Keyzers Kroon, red and yellow; Joost Van Vondel, dark rosy crimson, very large flowers; Brutus, bright scarlet, small flowers; Proserpine, deep rose, handsome; Vermillion Brilliant, rich vermilion; and Yellow Prince, bright clear yellow.

—— At the ordinary meeting of the Royal Meteorological Society, to be held at 25, Great George Street, Westminster, on Wednesday, the 16th instant, at 7 P.M., the following papers will be read:—*"Report of the Wind Force Committee on Experiments with Anemometers conducted at Hersham," drawn up by G. M. Whipple, B.Sc., F.R.Met.Soc., and W. H. Dines, B.A., F.R.Met.Soc. "On the Measurement of the Increase of Humidity in Rooms by the Emission of Steam from the So-called Bronchitis Kettle." *This paper will be in type before the meeting. Any Fellow wishing to take part in the discussion can obtain a copy on application to the Assistant Secretary.

—— Messrs. Carter & Co. desire to say they have been requested to supply lawn seeds for the requirements at the forthcoming Italian Exhibition, also that they are sowing lawn seeds at the Anglo-Danish Exhibition, South Kensington.

—— Mr. Joseph Mallender sends the following Summary of Meteorological Observations at Hodsock Priory, Worksop, Notts, for April, 1888:—Mean temperature of the month, 43·4°. Maximum on the 28th, 66·3°; minimum on the 6th, 23·2°. Maximum in the sun on the 28th, 122·6°; minimum on the grass on the 9th, 16·2°. Mean temperature of air at 9 A.M., 44·2°. Mean temperature of the soil 1 foot deep, 42·7°. Nights below 32°, in shade ten, on grass seventeen. Total duration of sunshine in month, eighty-four hours, or 20 per cent. of possible duration. We had six sunless days. Total rainfall in month, 1·49 inch. Rain fell on sixteen days. Average velocity of wind, 12·6 miles per hour. Velocity exceeded 400 miles on seven days, and fell short of 100 miles on one day. Approximate averages for April:—Mean temperature, 46·4°. Rainfall, 1·66 inch. Sunshine (seven years) 132 hours. A dull, cold, and rather windy month, with average rainfall and much N.E. wind. Mean temperature the same as last year, but lower than any other recent one except 1879. Vegetation very late.

—— Mr. E. Squelch, The Gardens, Boigne Grove, Maidenhead, writes to say he Commenced Cutting Asparagus in the open air on April 24th and some on May 1st. The beds are in full bearing. They were a fortnight earlier last year. He asks if this is remarkably early for the exceptionally cold and late spring?

—— Plantations in Bengal and Burmah.—At a meeting of the Royal Scottish Society of Arts last week in the Hall, 117, George Street, Mr. J. N. Inglis, C.E., read a paper on "Plantations Producing Fuel and Timber for Building Purposes in Bengal and Burmah." He remarked so great was the demand for wood for building purposes in Bengal, that in the last quarter of a century trees seldom arrived at maturity before the axe was laid upon them, and large tracts of the country along the railway and inhabited parts were bare of trees. Trees and shrubs were now planted round every village. Famine, which was unknown in former years, was becoming a painful reality; but if a country was sufficiently wooded, it was almost certain to obtain the requisite rainfall. Referring to the plantations on the banks of the canals in Burmah, Mr. Inglis said that the cost of planting a tree and bringing it to maturity was about 15s., and that it was sold by the Government to be used for building purposes at about £5.

—— A valuable paper, describing a new method of extraction of the alkaloids from Cinchona bark by cold oil, as used at the Government Cinchona Factory in Sikkim, was lately drawn up by order of the Lieutenant-Governor of Bengal, and has now been issued. Dr. King, the Superintendent of the Sikkim Plantation, carried on a long series of experiments on an acid and alkali process of manufacture, by which he succeeded in producing an excellent quinine. He never, however, succeeded in recovering much more than half of the amount contained in the bark on which he operated. The acid and alkali process had, therefore, to be abandoned as wasteful and inefficient. A process depending on the maceration of the bark in spirit was next tried, but, after much experiment, it was in turn abandoned. During a visit which Dr. King paid to Holland in 1884, he obtained some hints as to a process of extraction by means of oil. Benefiting by the advice of some chemical friends, Mr. Gammie, the resident manager in Sikkim, has been able to perfect this process, with the result that the whole of the quinine in yellow bark can be extracted in a form indistinguishable, either chemically or physically, from the best brands of European manufacture. This can be done cheaply, and the Bengal Government has caused an account of the matter to be printed, in order that private growers of Cinchona may be enabled to take full advantage of the process, and that a permanent reduction in the price of quinine may ensue. —(*Nature*).

—— A report by the American Consul at Mayence, on Forest Culture in Hesse, has been lately issued in the Consular Reports of the United States. The writer discusses the organisations and functions of the department having the care of forests, the duties of the various classes of officials employed in forest cultivation, the economical results of the system pursued, the course of instruction followed in the schools of forestry, the organisation and methods of the institution for experimental forestry, and the degree and amount of control assumed by the State over private forests.

—— The Wakefield Paxton Society.—There have been two meetings of this Society recently. At the first Councillor Milnes, the President, was in the chair, and Mr. Brown, gardener at Hatfield Hall, occupied the vice-chair. Mr. W. K. Woodcock of Sheffield read a long and very able paper on "Garden Literature, Past and Present." Councillor Howden, in proposing a vote of thanks to Mr. Woodcock, kindly promised to defray the cost of certain works on horticulture which Mr. Woodcock recommended should be added to the Society's library. Mr. B. Whiteley seconded the motion. Mr. Squire Pickersgill of Bond Street presented three beautiful quarto volumes to the Society, and on the motion of the President, seconded by Mr. H. Oxley, he was accorded a very hearty vote of thanks for his kindness. At a special meeting subsequently, when there was a very good attendance, the same two gentlemen presided. The Rev. F. D. Horner of Kirkby Lonsdale, and formerly vicar of Normanton, delivered an exceedingly interesting lecture on "The Auricula," and it was listened to with the greatest

attention. On his way home from London and Manchester he halted for a night at Wakefield, and not only gave the local Paxtonians and florists an opportunity of admiring the specimens with which he had gained high honours in keen competitions, but he clearly, fully, and in a very happy style pointed out to his hearers how to grow similar plants. At the close of the lecture Mr. Horner answered a number of questions and gave much interesting and valuable information. On the motion of Mr. W. Hudson, seconded by Mr. Jesse Hardwick, and warmly and eloquently supported by Mr. Herbert Chapman, a very hearty vote of thanks was accorded the lecturer.

—— Snow's White Winter Broccoli, Sandringham Variety. —Mr. W. J. Murphy, Clonmel, writes—I am surprised your correspondent, "A Kitchen Gardener," should have omitted Snow's White Winter Broccoli, page 356, from those he recommends. A quarter of a century since the lecturer on horticulture at the Government Farming and Gardening Institute at Glasnevin, I remember well, gave this first place. Since then I have tried dozens, and now retain but three for my own use or for commendation among my many gardening friends. They are Snow's, Mammoth White, and Late Queen. The two last do well in strong rich loam, and if planted with a "crow bar," and without stirring the soil, they will stand the winter best and be more compact.

THE CULTURE OF CYCLAMEN PERSICUM.

The cultivation of the Persian Cyclamen does not, as a rule, receive the attention it deserves, for it is one of the most useful plants for general decorative purposes for the autumn, winter, and spring. As the time is now at hand for taking in hand those that have done flowering for this season, a few remarks concerning their culture may be of service to some of your readers. Your correspondent, "K" (page 339), in his brief remarks on the Cyclamens at Ripon has rather taken the wind out of my sails, as the system he records does not differ very much from the one that I have been the most successful with; but I have never used bottom heat, although it may be advantageous.

The soil in the pots should be allowed to become sufficiently dry, so that it will freely part from the roots without doing them much damage; but it must not remain dry for long, as it is a mistake to dry the corms off. If the plants have healthy foliage on them let it remain, but should it be infested with red spider, thrips, or any other insects it is best removed. The soil should be entirely shaken from the roots carefully, so as not to injure them more than can be helped. They may then be put into clean pots properly drained, selecting the size of pot in proportion to the quantity of roots and size of corm. If the corms are young, and it is desired to have large plants, they may be put into the same size as they came out of, and shifting to a size larger when they get well rooted. For general decorative purposes 4½ and 6-inch pots are mostly suitable, and plants sufficiently large can be produced in these sizes for all ordinary purposes. The soil should consist of equal portions of loam, leaf soil, and decayed manure, with a good sprinkling of sand and a little soot thoroughly mixed previous to using. It is very important that this thoroughly mixing of the ingredients should be done, otherwise the plants will vary in their growth, some receiving more than enough of the rich soil and others, on the contrary, have a deficiency, consequently will not do so well. In potting the soil must be well worked among the roots and made quite firm, leaving the corm well above the surface. If the soil is in a rather dry state at potting time it will require watering after. If moderately moist no water will be required for a few days beyond a light sprinkling over each day. They should be placed in a house or frame as near the glass as possible in a temperature of about 60°, and given a moist atmosphere, and kept rather close until growth commences, when more air may be admitted to build up a good strong growth. After they are well started they require to be kept on the moist side, dryness at the root and in the atmosphere being fatal to their well-being. A slight shade during the hottest part of the day will be necessary, but they should be allowed as much sun as they will bear, especially during the autumn months.

If green fly attack the young leaves fumigate at once, and if thrips or red spider, dip the plants in some well known insecticide, but great care is necessary in this operation, otherwise the foliage in the earlier stages of their growth will be injured, and a check given to the plants. The humid temperature should be maintained well into the autumn to give the plants sufficient strength to prepare for the forthcoming bloom. As they approach the flowering period more air should be given, also a reduction of the moisture in the atmosphere made, and with the assistance of a little weak liquid manure, a light position, and a temperature of about 50°, a good show of blooms should be the result.

Inferior strains of Cyclamen should not now be tolerated, as a good strain can be procured from the various seedsmen who make a specialty of them, and fine flowering plants can be had in from twelve to fifteen months from the time of seed-sowing, but the present is not the time for sowing seeds.—W. Simpson, *Knowsley*.



ORCHIDS AT BIRMINGHAM.

Near to Selly Oak station is The Uplands, the residence of Charles Winn, Esq., who is a very successful exhibitor of Orchids at the Birmingham Shows. At the Chrysanthemum Show held in November last his gardener, Mr. G. H. Barnes, exhibited specimens of Cœlogyne cristata in his collection, and again at the spring Exhibition on April 11th and 12th plants of the same species were included. To obtain such a succession of blooms the plants are grown in different temperatures, the former being helped along in the heat of the Cattleya house, whilst the latter are retarded in the cool house with Masdevallias, the pseudo-bulbs in both cases being well developed. Such a valuable chaste flower is always welcome; and that the flowering season can be prolonged without the least injury to the plants is a fact worth recording.

The Cypripedium house, although only 26 feet long and 24 feet wide, is filled with many rare plants; something like 120 species and varieties are grown, and those in flower justify the remark that only the best have been obtained. C. Druryi has eighteen growths, and is flowering well; C. Morganiæ has six growths, five of which have appeared in eighteen months; the richly coloured C. grande atratum, C. præstans, and the new hybrid C. Lathami, raised in the Birmingham Botanical Gardens, are all doing well.

It is the practice of Mr. Barnes to steam the house every afternoon. This is done by closing the ventilators and turning the hose on to the hot-water pipes until the house is full, afterwards opening the lights a little to let out the superfluous moisture; and in addition to this the plants are syringed lightly two or three times daily. Besides keeping insects in check this system is very beneficial to all the occupants, for the plants are as vigorous and healthy as any I have met with. The Cattleya and other houses are similarly treated when there are few plants in flower, but to attempt it in a flowering house would be at the risk of losing the bloom. Odontoglossum vexillarium appears to like this treatment. Many of them have thrown up three spikes from a single growth. One small plant is carrying twelve spikes from four growths.

The long span-roofed cool house is filled with choice forms of Odontoglossum Alexandræ, together with many supposed hybrids. O. Rossi majus was rendering the house gay, one large specimen having over sixty flowers; and O. R. m. rubescens had six blooms on a spike. At one end is a panful of Cypripedium spectabile with three dozen growths. Two years ago there were only two small potfuls of Disa grandiflora. These were divided and carefully nursed, and now, besides several pots, there is a pan containing about thirty-seven flowering growths.

The Cattleyas and Dendrobiums are as select as the Cypripediums. Among the former I noted a fine piece of C. exoniensis with twelve large bulbs, each bearing a bright green leaf. The true old form of C. labiata is also included, and good plants of the gorgeous C. Trianæ formosa were in bloom, together with a host of other Orchids.—G. W. C.

MANURES FOR PLANTS.

Last week I noted a communication on feeding plants, and although I am unable to speak on the merits of the case from the point of view of your correspondent, having failed to follow the discussion, I have some notes on the subject which may not be out of place without in any way encroaching on debateable points. The notes referred to were suggested by a case which was brought to my notice last autumn. From a commercial point of view the subject was one of some importance to the owner of the plants—Chrysanthemums—grown for cut flowers. Looking at them they appeared to suffer from starvation, and that was what I made bold to tell their owner, but he brought forward the very conclusive evidence that the plants had been regularly supplied with liquid manure, so that starvation was not a satisfactory solution of the case. However, I held by my opinion, and advised the flushing of the soil with hot water, and thereafter applications of either superphosphate of lime

or good guano applied as a surfaee dressing onee a week. This advice was followed, and a very valuable erop of flowers was the result, though not so good as would have been seeured had the liquid manure been stopped a month earlier, and the artifieial manure applied.

Now, I have no doubt many of your readers will, like my friend, feel a difficulty in appreeiating starvation in a ease of this sort. Shortly, the solution is this. The plants had been growing well, the soil was well filled with roots, then eame the liquid manure containing very imperfeet plant food, and the plants simply starved in the midst of seeming plenty. My theory was that the food they required was not more of a so-ealled stimulating nature, sueh as nitrate of soda or sulphate of ammonia, for they had been getting plenty of food of that nature, but one of what may be ealled a more solid nature, and the superphosphate aeted like a eharm.

At the same time it may be pointed out that plants may reeeive even too mueh food of that nature. A few of our own plants appeared to be standing still at the "housing" time last autumn; but three doses of hot water washed the superfluous material away, and no harm was in the end done. If we eonsider the matter I think it is possible to proeure a perfeet plant food. Any scientifieally composed plant food is suffieient for any plant requiring help in that way. It is quite possible, no doubt, that there may be in the composition something whieh is not required for every plant. But that is a matter of no importanee so long as what the plant does require is present in fair proportion. Growers who have not studied the matter, and who apply a dry manure, are apt to fly direetly to either nitrate of soda or to sulphate of ammonia, either of whieh is valuable when properly used, but neither so useful as superphosphate of lime and that again must yield to the best guano, whieh, however, is mueh more expensive.

A very useful and fairly eheap manure for everyday use among softwooded plants is eomposed of three parts sulphate of ammonia to five parts superphosphate; slight applications of this given to plants weekly direetly the roots begin to work after potting, and inereased in quantity as the roots inerease in number, will give the very best results. I am not so partieular about a potassie element in a manure as I once was, as its utility in the ease of short-lived plants is doubtful, and the others serve the purpose perfeetly. Superphosphate is extremely valuable on aeeount of its root-produeing tendeney. Plants whieh reeeive plenty of water and not allowed to beeome dry, pushing out roots and making away with every bit of the undissolved material, while in the inside of the pot, the proeess of root-produetion goes on uneeasingly. Plants may be grown fairly well in almost any kind of soil if sufficiently fed, but it is a mistake to allow the plant to thoroughly obtain possession of every bit of soil in the pot before feeding from the outside begins. The sensible system is to eonserve what food there may be in the soil by beginning to apply the manure direetly rootaetion is in a state of aetivity, and so continue the rooting medium in sueh a fertile eondition as there may be a reaction betwixt the good soil and the applied manure.

Apart from these manurial foods, there is an element so essential to the well-being of plants, and the effeet of whieh seems to be so imperfeetly understood by young gardeners, that before closing these notes I may roughly point out its ehief eharaeteristie and the part it plays. The element I refer to is water. We know that water has so great an attraetion for most things, that it is quite possible to grow some plants fairly well in water alone, the water in some manner having taken up as mueh of the other foods neeessary to plant life as to sustain them in vigour. If we wish to strike euttings rapidly and sueeessfully we plaee them in a medium of sand and water, and one of the euriosities of plant eulture is to root a plant and grow it among sphagnum or eommon moss, keeping the material well saturated with water. In the same manner bulbs may be eultivated in sponges, all the eare neeessary being to soak these from time to time. I think, then, that the ehief eharaeteristie of water in eonneetion with plant culture is the all-important work it performs as a solvent of the food eontained in soils, and along with that the absolute neeessity of its presenee in quantity in the soil, in order to the uninterrupted produetion of roots. If the supply is stopped long enough for the soil to dry, the youngest and most important roots perish, and the plants go on "short eommons." If sufficient water is given to again saturate the soil, the most aetive roots are absent, and the plant eontinues to suffer until a fresh crop of feeding roots are produeed to attaek the food waiting them. The differenee, then, betwixt a earefully watered plant and one allowed to beeome dry oeeasionally is, that the former goes forward without eheck, and the latter has a series of stoppages to make up, losing perhaps in the proeess its healthy greenness of foliage, or laek of size in flower, if nothing else happens. In eonneetion with the employment of artifieial manures water beeomes either a medium of the greatest utility, or, if earelessly applied, the means of doing the plant mueh harm. A well watered plant is always ready for its slight application of manure; a negleeted plant with feeding roots dead may be poisoned with the same. It is therefore wise to allow a dried-up plant to reeover somewhat before again applying manure.—B.

FLOWER FARMING.

Frequenters of the Covent Garden Flower Market during the spring and early summer months can form something like an adequate idea of the extensive demand for cut flowers, and of the enormous supplies furnished by home and continental growers. Delicate indoor flowers are sent in from various places, and are purchased mainly for the finer bouquets, wreaths, and buttonholes, but it is in the supply of hardier though often equally beautiful flowers from outdoors that the increase has been so rapid in recent years. The market is now amply provided with the best of the hardy flowers as they come in season, and some very gay effects are produced there during April, May, and June, the three chief months for floral trade. One of the most energetic workers in the extension of this business is Mr. J. Walker of Whitton, who at this time of year may be found every morning at his stand in the market disposing of the choicest Daffodils, Tulips, and Anemones by thousands, or later on he is equally busy with Pæonies, Irises, Gladiolus, and Ranunculuses. During five or six months Mr. Walker furnishes some of the finest home-grown hardy flowers to be seen in the market, and it might be therefore supposed that his farms and system of management would possess more than ordinary interest to anyone concerned in horticulture. Being favoured with an opportunity last Friday of inspecting these establishments, I



Fig 49.—Narcissus pallidus præcox.

will endeavour to briefly describe what was seen and learnt during an extremely agreeable visit on a bright May day of the old-fashioned type.

THE HAM FARM.

Though Mr. Walker's name is better known in association with the Whitton Farm, his more recent acquisition near Ham Common is much the larger, and is rapidly becoming the more important of the two. About 114 acres of land have been obtained and are devoted to bulbs, fruit trees, and vegetables, the two former as permanent crops, the last-named being employed to alternate with the bulbs. The soil is deep, of a peculiarly light sandy loam, such as at first sight would be thought excessively dry, but which seems to possess a never-failing supply of moisture below, though free from any approach to stagnation. The situation is open to the sun, yet fairly sheltered from winds, although these occasionally prove somewhat disastrous, as would be the case anywhere in our little island. Altogether, the soil and situation seem to be as favourable for the culture of bulbs as could be wished, and it would be difficult to say in what particular our Dutch friends on the other side of the German Ocean have the advantage. The land is readily worked with the plough, manure is liberally applied for the various vegetable crops, and then the bulbs are planted to remain one or two seasons, following again with vegetables, especially with Peas. A considerable space has been planted with Plum, Pear, and Apple trees, with Currants between the trees in the rows, and beds of Daffodils between the rows. This system will be carried out more extensively as soon as it has been found which varieties of fruits are likely to succeed best. The Pears are healthy vigorous trees from Sawbridgeworth, on the Pear and Quince stocks, the latter for early fruiting being planted alternately with the former. The Apples are similarly promising, all on the Paradise stock, and in two

or three years' time this farm will probably be almost as interesting for its fruit as its flower production.

Tulips.—Just now, however, we are most concerned with the flowers, and the Tulips afford such a brilliant display that they merit first attention. A series of parallel beds, 6 feet wide and 300 yards long, are planted with Tulips, several rows or a whole bed being devoted to one variety. Each bed contains six or seven rows according to the strength of the plants, and in this "little plot of Tulips," as their owner terms it, there must be between 200,000 and 300,000 bulbs. The effect of such a number of plants in flower under a bright sun was dazzling in the extreme, and such large masses of brilliant colours could not be seen anywhere but in what is considered the special home of bulbs in Europe—Holland. The varieties grown are not very numerous, but are selected for the possession of certain important qualities, such as good habit, substantial flowers, clear, well-marked, or effective colours, and durability. For example, the early Duc Van Thols are found to be too unreliable for culture on a large scale, and several other well known varieties have been discarded. A great favourite is the handsome Keyzers Kroon with its bright red yellow edged flowers, and one bed of this was grand last week. Another good variety is Thomas Moore, of sturdy habit, with well formed bronzy red flowers, a colour much in demand just now. Duchessse de Parme is a useful Tulip, very hardy and bearing flowers of capital substance, rich scarlet edged with yellow. Rosa Mundi is white, edged with rose ; Rose Gris de Lin, dwarf, sturdy, of a soft rosy tint ; L'Immaculée, compact, free and useful, one of the best pure white varieties, White Pottebakker being also useful but much stronger and taller than this. Proserpine, deep rose, is a well known excellent bedding variety, and is similarly useful for cutting; Artis, deep rich red, is another capital variety of fine habit ; Sunbeam, very dark scarlet, is showy and even ; Yellow Rose, Canary Bird, Yellow Pottebakker, and Yellow Prince are the principal yellow varieties, all good, of slightly differing shades ; Double Rose being a good double of a pale yellow tint ; Princess of Austria is a very late variety with vivid scarlet flowers, compact in habit, and comes in well after the others, leading up to the Gesneriana varieties. In a favourable season a succession of flowers extending over a month is obtained, the Duc Van Thols commencing the period, but this season the buds were destroyed by larks, and owing to the delicate texture of their flowers they are soon damaged in bad weather. A keen strong wind soon spoils a large stock of flowers, and hailstorms also cause much injury, as every flower in the slightest degree defective is rigidly rejected when cutting for market. The flowers are gathered before they are fairly expanded, and placed in pots of water in cool sheds, where they will last for several days if necessary, but usually they are transferred immediately to the Whitton Farm, where they are tied in bunches of a dozen flowers each, and dispatched to Covent Garden Market the same night or early the following morning.

It might be added that the beds are slightly raised with alleys between, and the bulbs are all lifted at the end of June, planting being done in October when the weather is suitable. No protection is provided beyond that afforded by a hedge on one side of the quarter devoted to the beds, but the most tender are planted near to this, and the others in succession according to their respective hardiness.

Daffodils.—The numerous forms of Narcissi that are adapted for culture on a large scale and which yield abundant flowers for cutting constitute Mr. Walker's great specialty, and the Tulips are only a kind of by crop. The Daffodils are grown by millions, two or three acres of one variety, and some idea can be gained of the stock when it is said that in the height of the season 2000 dozen bunches of twelve flowers each can be cut in one week, and as many as seventy dozen bunches of the beautiful N. obvallaris have been taken into market in one morning, cut from eight beds each 200 yards long. The beds are the same width as those for Tulips—namely, 6 feet, and formed in a similar way, with seven rows in a bed of all the stronger growing varieties, but they are planted close together in the rows. About one-half of the bulbs are lifted as soon as the foliage turns yellow—namely, towards the end of July ; they are immediately conveyed to sheds, sorted, allowed to dry gradually, and replanted at the end of August. Some varieties will succeed if left in the beds three years, but others require lifting every year ; in fact Mr. Walker advocates annual lifting for all, and it is only the labour and expense that deter him from carrying this out as part of his system. The strongest varieties are planted 3 inches beneath the surface, and the weakest 1½ or 2 inches. The flowers are always cut with as long a stalk as possible, and a good indication of the respective strength of the bulbs can be afterwards detected in the growth of the portion of flowerstalk remaining ; in the strongest bulbs it will extend to 5 or 6 inches, while on the weakest it will scarcely lengthen an inch.

In growing such a large quantity of plants the selection of varieties is an important matter to ensure a succession of flowers over as long a period as possible. This is accomplished at Ham in a remarkable manner in fine seasons. N. pallidus præcox (fig. 49). commences flowering in February, though this year its flowers were not cut until late in March. Then follows the Tenby Daffodil, N. obvallaris (fig. 50), which is a more reliable early variety though a little later than pallidus præcox. It is more hardy, and many persons prefer its bright golden flowers to the paler tints of the other. Of N. obvallaris it has already been noted there are eight beds 200 yards long, all the plants wonderfully strong and evidently thoroughly at home. They are two very useful varieties, but pallidus præcox is distinct in one respect—it produces a larger succession of flowers than any other. The large trumpet Daffodils follow those named ; then come the incomparabilis varieties, which at the present time are so beautiful. The poeticus varieties, such as ornatus, are also in flower now, the later poeticus recurvus will be in flower in a fortnight, and the season is concluded in June with the double poeticus, the handsome fragrant "Gardenia flowered Narciss," which is so popular. The trumpet Daffodils comprise the stately bicolor Horsefieldi, and Empress, Emperor, Princeps, spurius, maximus,

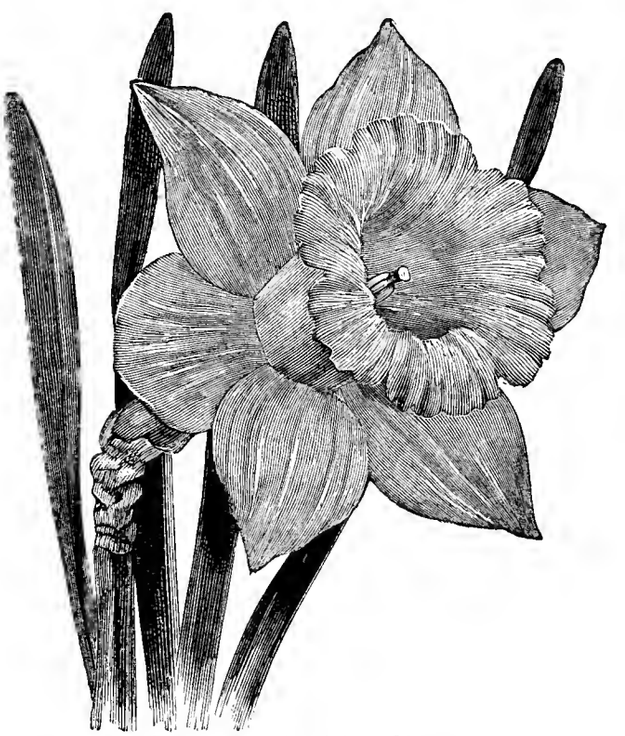


Fig. 50.—Narcissus obvallaris.

and many others, some of which will be noted in referring to the Whitton Farm. Two very beautiful varieties of N. incomparabilis now being cut in large quantities are Cynosure and Stella, the former with a pale yellow perianth with a rich gold crown, the latter with white perianth and delicate yellow crown. Both are very graceful, and for arranging in large vases they are admirable. The double forms of incomparabilis, Sulphur Crown and Orange Phœnix, are also in great demand, and corresponding space is devoted to them. The Campernelle and the double N. odorus are grown extensively, and the vigorous plants are now yielding these delightfully fragrant flowers in thousands. One bed of the Campernelle is very remarkable, the bulbs have been planted two years, and have ten to thirteen flowers to a root. Several Tazetta varieties are included, but they are not in such favour as the other sections.

The graceful Poet's Narciss, or Pheasant's Eye, as it is popularly styled in the market, is in most demand, and a large space is devoted to its best varieties. N. poeticus ornatus, which is distinguished by its broad round pure white perianth lobes and orange or red tinted crown, is in its best condition at the present time ; some thousands of flowers are being gathered every day from the twelve beds 200 yards long which are filled exclusively with this variety. Then of the later N. poeticus recurvus there are between two and three acres, the plants being readily distinguished at a glance from the other poeticus varieties by the slightly glaucous and drooping or recurving foliage. The flowers will not be expanded for a week or two yet, but they come as a most useful succession to the ornatus. About two acres are occupied with the double poeticus, and these will afford a fine June display and supply of flowers.

In a sheltered portion of the farm beneath the young fruit

trees are some rows of the brilliant scarlet Anemone fulgens and its variety multipetala, which seems to succeed very well, and is had in flower as early as February in mild seasons. The plants grow strongly and flower freely, but it is essential that they be protected from wind or their beauty is soon destroyed.

Before summing up the results of Mr. Walker's extraordinary work we must glance at the Whitton Farm, and as that would take too much space this week, the notes will be reserved until next issue.—L. CASTLE.

ROYAL HORTICULTURAL SOCIETY.

MAY 8TH.

SUFFICIENT exhibits were contributed by amateurs and trade growers to render the meeting in the Drill Hall, James Street, on Tuesday an interesting one, but the visitors were by no means so numerous as might be expected at this time of year. The Fruit Committee was not very long occupied, but the Floral Committee had a number of novelties submitted to its consideration, of which twelve were honoured with certificates. Upon the side tables were arranged the collections of Daffodils and hardy flowers from Messrs. Barr & Son and T. S. Ware, the centre table being devoted to Roses, Orchids, and miscellaneous plants.

FRUIT COMMITTEE.—Present: Harry J. Veitch, Esq., in the chair, and Messrs. John Lee, Joseph Cheal, G. W. Cummins, Charles Ross, Charles Howe, W. Marshall, J. Wright, J. Smith, R. D. Blackmore, and Harrison Weir. The duties of the Committee are usually light at this period of the year, and only a few examples of fruit and vegetables were submitted for examination.

Messrs. Barron & Sons, Elvaston Nurseries, Borrowash, sent a seedling Apple, which had been before the Committee on a previous occasion. It is named Barron's A1. It is a medium-sized firm fruit, greenish yellow streaked with red, and evidently a good keeper; flesh firm and brisk in flavour. The Committee were favourably impressed with this culinary Apple, and expressed a desire for information respecting its origin, history, and the character of the growth of the tree. A dish of Asparagus was sent by Mr. W. Palmer, gardener to W. F. Hume Dick, Esq., Thames Ditton House, Thames Ditton; also Cucumbers grown on the north side of a span-roofed house, on the opposite of which had been grown a crop of Melons. The fruits were good, and the Asparagus was noticeable for its great length of colour, greenish purple, while the stems were large and succulent. A cultural commendation was awarded.

Mr. E. Beckett, gardener to H. H. Gibbs, Esq., Aldenham House, Elstree, sent dishes of Lady Downe's Grapes, and President Strawberry, For the latter, which were fine and well coloured, a cultural commendation was awarded; and for the Grapes, which were cut on January 2nd, and were very firm, a vote of thanks was accorded.

Some seedling Rhubarbs were examined by the Committee, but only two of them were thought to possess merit, one of them being too much like the Victoria and the other Linnæus, to merit further consideration.

FLORAL COMMITTEE.—Present: G. F. Wilson, Esq., F.R.S., in the chair, and Messrs. H. Herbst, W. Bates, B. Wynne, J. Fraser, G. Duffield, C. T. Druery, T. Baines, G. Nicholson, R. Dean, C. Noble, H. Ballantine, C. Pilcher, J. Dominy, H. M. Pollett, J. O'Brien, E. Hill, A. J. Lendy, J. Fraser, W. Goldring, G. Paul, J. Walker, the Rev. W. Wilks, and Dr. M. T. Masters.

Roses.—Several beautiful collections of Rose blooms were exhibited, and very notable amongst them were those from Mr. J. Walker of Thame. Two boxes were shown comprising twenty-four blooms each of Niphetos and Maréchal Niel, the former deep substantial pure blooms, the latter wonderful examples, grandly formed, full blooms, of the richest colour. They were cut from plants on the Briar stock, and some of the specimens are said to be thirty years old (silver Banksian medal). From Mr. H. Bennett, Shepperton, came five boxes of Pedigree Roses, Princess Beatrice, a finely shaped Hybrid Tea, of a bronzy yellow hue, very handsome, an undoubted acquisition; the charming little pink Polyantha Rose, Little Dot, and about twenty dozen blooms of Lady Mary Fitzwilliam, all handsome full blooms of good substance, varying from a very pale blush, nearly white, to a deep pink shade (silver Banksian medal). Mr. W. Rumsey, Waltham Cross, showed a choice collection of Tea and Noisette Roses, the varieties best represented being Boule d'Or, Souvenir d'Elise Vardon, Souvenir d'un Ami, Safrano, Rubens, Madame de Vallombrosa, Etoile de Lyon, Marie Van Houtte, Niphetos, and Maréchal Niel. The graceful Polyantha varieties, Mignonette (pink) and Paqueritte (white) were also included (silver Banksian medal). Messrs. W. Paul & Son, Waltham Cross, were awarded a certificate for the yellow Tea Rose, Madame Hoste, and also showed plants of the new deep crimson H.P. Rose Gloire de Margottin, and a semi-double form of Rosa rugosa alba, named Madame Georges Bruant.

Orchids.—Though, according to the programme, there should have been a special display of Orchids at this meeting, there were really fewer than usual, but these comprised some interesting plants, notably Mr. B. S. Williams' group of Cypripediums from the Holloway nurseries, for which a silver Banksian medal was awarded. All the plants were very strong healthy specimens, and all were in flower. Very fine were C. Swanianum, C. Druryi, C. selligerum majus, C. Boxalli and its variety aureum, C. Io grandis, C. argus, and C. grande, with three to ten flowers each. A large variety of Oncidium sarcodes, named superbum, was also shown with a new Amaryllis, Mr. R. H. Measures. the flowers pink, barred and edged with white. H. J. Buchan, Esq., Wilton House, Southampton, sent a plant of Cattleya Lawrenceana delicata, a pretty variety, with soft mauve tinted flowers. From Mr. P. Blair, Trentham Gardens, Stoke-on-Trent, came a plant of Odontoglossum cirrhosum, Trentham variety, which has large white flowers, heavily spotted with maroon. A. H. Smee, Esq., The Grange, Carshalton (gardener, Mr. Cummins) exhibited a remarkably strong plant of Odontoglossum Marriottianum, which was grown in the open air during the summer of 1887. It had several stout pseudo-bulbs and strong growths, with two fine racemes of sixteen and seventeen flowers each (cultural commendation). A scarce Orchid, Odontoglossum erinitum sapphiratum, was shown from the same garden, with one small flower, the sepals and petals yellowish, the lip triangular in shape, white, spotted with bright purple. Capt. Maxwell, Terregles, Dumfries, sent a variety of Odontoglossum Andersonianum, with pretty creamy white flowers heavily spotted with brown. B. D. Knox, Esq., 17, Gloucester Place, Portman Square (gardener, Mr. Laurence), exhibited Odontoglossum Ruckerianum, the flowers dotted with brown, and beautifully flushed with purple; also Oncidium curtum Gardnerianum, like O. sarcodes (vote of thanks). G. C. Daux, Esq., East Moulsey, showed a plant of Dendrobium densiflorum, with three long racemes (vote of thanks).

Daffodils and Hardy Flowers.—Silver-gilt Banksian medals were awarded to Mr. T. S. Ware, Tottenham, and to Messrs. Barr & Son, King Street, Covent Garden, for large groups of choice Daffodils and hardy flowers. In Mr. Ware's collection were several novelties, a white variety of Anemone appenina and Polemonium confertum being selected for certificates, while a large pan of the rich blue Gentiana verna was a most attractive feature. Messrs. Barr & Son also obtained two certificates for Narcissus bicolor Mrs. J. B. M. Camm, and N. incomparabilis Gloria Mundi. The numerous forms of the Leedsi type were well shown, the pure white variety Beatrice being very attractive. These two groups formed a most important addition to the display, as they filled the tables near the walls, extending the whole length of the hall.

G. F. Wilson, Esq., Oakwood, Wisley, was adjudged a vote of thanks for a series of varieties of Gentiana acaulis collected by Mr. Scott Wilson in Switzerland in 1885 and 1886. They were specially interesting as showing a marked variation in colour from deep blue through several shades of pale blue to nearly white, and one was of quite a pink tint. Five or six distinct varieties were exhibited. Professor M. Foster, F.R.S., Shelford, Cambs, showed several Irises, one named Iris Suworowi, var. (lineata) had small flowers veined with brown, and central bright blue crests; the other was of the I. iberica type, but smaller, with pale "standards" and purplish mottled "falls."

Miscellaneous.—Mr. F. Ross, Pendell Court Gardens, Bletchingley, showed flowers of Cantua dependens with long orange-tinted tubes and rosy crimson lobes, pale on the inner surface. It is grown at Pendell Court trained to a wall in a cool house and flowers profusely every year (vote of thanks). Specimens of Callistemon salignus were also sent from the same garden with long dense creamy white spikes. Mr. J. Doughty, Angley Park, Cranbrook, Kent, exhibited a bright scarlet Carnation named Angley Park; Mr. W. Seaman, gardener to J. Briggs, Esq., Brentwood, sent a seedling Coleus with deeply crenated tapering leaves splashed with yellow, crimson, and green; Mr. J. Knight, The Oaks, Epsom, showed flowers of Carnation Mrs. G. F. Wilson and Rob Roy, white and salmon tipped with red (vote of thanks); Mr. C. Smith, Brighton, exhibited plants of Mignonette Smith's Defiance (vote of thanks), of bushy habit, the spikes long but not so large as some varieties; compact single specimens in 48-size pots were shown.

Magnolia conspicua was admirably represented by some dozens of handsome pure white flowers shown by Mr. J. Hudson, Gunnersbury House Gardens, Acton. The tree from which they were gathered is over 30 feet high, well proportioned, and loaded with flowers, which are unusually large and pure. Messrs. Paul & Son, Cheshunt, contributed a specimen of Rhododendron exoniensis with large white Azalea-like flowers; a basket of Tree Pæonies; Acer Negundo aurea variegata, a golden variety in which the colour was not fully developed; the brown and bronze-leaved Prunus Pissardi was, however, in capital condition, amply demonstrating the distinctness and value of this tree. Rose Lady Alice, recently certificated, and the graceful Fairy Rose Red Pet were shown by the same firm. Mr. C. Turner, Slough, had a collection of beautiful Alpine Auriculas, several of which were certificated. Messrs. Kelway & Son, Langport, Somerset, sent flowers of varied Amaryllises cut from bulbs that are grown in cold frames from May or June until January or February, when they are lifted, potted, and placed in a house to develope their flowers.

Messrs. J. Veitch & Sons, Chelsea, sent a well-flowered specimen of the Tasmanian shrubby plant, Olearia Gunni, which has a great number of white starry flowers resembling Michaelmas Daisies. Messrs. G. Bunyard & Co., Maidstone, showed a double white Deutzia named Pride of Rochester, much like the double variety of D. erenata. Mr. W. Thompson, Tavern Street, Ipswich, sent plants of a seedling Primula, with deep purple flowers, dwarf and free (vote of thanks). Mr. J. H. Virgo, Walton-in-Gordano, Clevedon, exhibited a large-flowered variety of Myosotis dissitiflora, named grandiflora, also a darker variety named Blue Perfection (vote of thanks); and Mr. R. Dean, Ealing, had a basket of the dwarf free large-flowered Wallflower, Bedfont Yellow, which has been previously certificated. Primula Sieboldi Snowflake, pure white, and a large dark Polyanthus named Mr. John Woodbridge (certificated) were also contributed by Mr. Dean.

Messrs. H. Cannell & Sons, Swanley, were accorded a vote of thanks for a large yellow Calceolaria named Souvenir, very effective either for culture in pots or bedding.

CERTIFICATED PLANTS.

Odontoglossum Pescatorei, Poë's variety (J. T. Poë, Esq., Riverston, Nenagh).—A fine variety with large well formed flowers, white, with bold deep purplish spots.

Phillyrea decora Vilmoriniana (Paul & Son).—A compact shrub, with long narrow dark green leaves, and small white flowers thickly clustered in the axils of the leaves. It is especially recommended for planting in towns, as it has been found to stand the smoke well.

Auricula Harry Turner (C. Turner).—An Alpine variety, velvety purple shaded to a light edge, pale gold centre, large flower of good shape and fine truss.

Auricula Mrs. Harry Turner (C. Turner).—Another Alpine variety of dark maroon colour with a mauve margin and pale centre. Very pretty and distinct.

Auricula Hetty Dean (R. Dean).—A beautiful dark velvety purple Alpine, shaded white with a creamy centre.

Polyanthus John Woodbridge (R. Dean).—A strong and handsome variety with rich crimson maroon flowers of good size and gold centre. Trusses large and bold.

Azalea Vervaeniana (Turner).—A large double-flowered variety, with a few salmon and pink streaks on white. Showy and of compact habit.

Rose Madame Hoste (W. Paul & Son).—A Tea variety, with delicate pale yellow flowers of considerable size, very deep, the petals broad.

Narcissus Incomparabilis Gloria Mundi (Barr & Son).—A beautiful variety with pale yellow perianth and deep orange expanded crown. One of the best of the section.

Anemone appenina alba (T. S. Ware).—A white or faintly tinted variety of the well-known blue Anemone appenina.

Polemonium confertum.—A dwarf plant with curious small leaves and pale bluish bell-shaped flowers in compact heads.

Narcissus bicolor, Mrs. J. B. M. Camm (Barr & Son).—A distinct variety of the trumpet section, with white perianth and delicate creamy tinted crown.

SCIENTIFIC COMMITTEE.—Present: D. Morris, Esq., in the chair; and Messrs. Burbidge, Lynch, O'Brien, McLachlan, Pascoe, Michael, Smee, Ridley, G. Murray, Professor Scott, Professor Church, Dr. Hogg, and Dr. Masters.

This meeting was held in the new library, at 111, Victoria Street.

Eichornea tricolor.—Mr. Lynch showed flowers of this tropical aquatic plant from Pernambuco, where it was gathered by Mr. Ridley. The flowers are in erect terminal panicles, each of a rich blue colour, with a small yellow spot on the lower perianth-segment. Mr. Lynch had grown it in a pot submerged to the rim. A discussion ensued as to the culture of these beautiful plants, Mr. Burbidge narrating his method of inducing Pothos crassipes to flower. This he does by not allowing the plant to float, but by placing it in a pot on a shelf fully exposed to light, and thus checking its wandering tendencies.

Chrysanthemum homatoma. — Mr. Lynch also showed flowers of this plant little if at all better than our common ox-eyed Daisy, though in its native country, as shown in the following extract from Lowe's "Flora of Madeira," it must be a fine thing:—"In the island of Madeira a bush of this species on its native black or grey and barren crags—one mass of lovely rose-pink flowers, and conspicuous from afar like a Camellia or Rose bush—is a truly splendid and surprising sight."

Haplocarpha Leichtlinii. — A pretty yellow-flowered Composite, with the backs of the ray-florets flushed with purplish-brown. It seems as if it would make a handsome bedding plant.

Pilocarpus pinnatifolius.—A Rutaceous plant, with dark green pinnate leaves, the segments broadly oblong. The plant is interesting as being the source of the drug Jaborandi, and of the substance known as pilocarpine.

Pentapterygium serpens.—A curious Vacciniaceous plant, from the Sikkim Himalaya, with angular tubular flowers of a bright red colour. The leaves are in two rows, small, ovate, and the stems which bear them spring from a very large woody tuberous growth. The plant grows upon the branches of trees.

Zinnia elegans.—A Mexican weed, shown to illustrate the vast advance that has been made in the culture of the plants, and the art of the florist.

Dipladenia boliviensis.—Young stems of this plant were shown, in order to show the herbaceous stipular outgrowths at the base of the leaf, and which are divided into narrow lobes in a palmate fashion. These, instead of falling off or drying up, become woody, and may serve to aid the plant in climbing from tree to tree.

Dendrobium Quelchi.—Mr. Ridley exhibited a photograph of this North Australian Dendrobe, which is nearly allied to D. bigibbum, but is not yet in cultivation.

Monstrous Lælia purpurata.—Mr. Smee exhibited flowers of this species variously malformed. One had three anthers (*a*1, *a*1, *a*2).

Odontoglossum retusum.—Mr. Bonney, Swanley, Kent, showed a plant of this rare species, remarkable for its orange-scarlet flowers. A botanical certificate was awarded.

Erythronium grandiflorum.—Mr. Loder sent a fine spike of this flower, with no fewer than fourteen flowers, most of them fully expanded. This is the finest specimen of this plant yet exhibited.

Lily Disease.—From Mr. L. Castle came leaves and stems of Lilium candidum in a decaying condition, probably from the effects of a fungus (Peronospora). Mr. Geo. Murray undertook to report on the specimens.

Fir Branches and Squirrels.—The Editor of the *Scientific News* sent shoots of the common Spruce Fir gnawed off by squirrels, which seem specially destructive this season. The object of the animal in inflicting this injury is not obvious.

Malformed Cucumber Blossoms.—Messrs. Carter sent specimens of Cucumber flowers in which the calyx was leafy, and also showing other deformities, which were referred to Dr. Masters for further examination and report.

Iris Sari var., &c.—Professor Foster sent the bloom of an Iris which had been received from Nazareth, and which is said to grow wild there. In coloration it somewhat resembles I. iberica, but in essential features—rhizome, foliage, form of flower, &c.—is more nearly allied to I. Sari. Subject to the results of further study, Professor Foster "would be inclined to call it provisionally I. Sari var. Nazarena; but I do not wish to name it definitely at present. The other smaller Irises, as I. Suworowi (Regel) and the one with beard on inner perianth segments, is what Regel described as I. lineata (Foster), but which is really only a variety of I. Suworowi."

Gentiana acaulis.—Mr. G. F. Wilson showed flowers of this species with a curious spongy outgrowth from the outer surface of the corolla, on which Dr. Scott promised to report at another meeting.

Fertilisation of Tigridia and Hippeastrum.—A paper was read on this subject from Dr. Bonavia, in which he described how bees search for the nectar under each edge of the inner petals of Tigridia; but as they do not touch the stamens and pistil they must have discovered the concealed glands through scent, and so rifle the flower, just as ants do, without pollinating it. Hippeastrum is fertilised by pollen-seeking bees or bee-like insects in India. One kind of bee balances itself on the wing opposite the tuft of anthers, and then, suddenly making a sort of somersault among them, brushes off the pollen with the hairs of its body, when the stigma gets dusted all over with pollen. A second kind, after balancing itself, by a sudden movement brushes off the pollen with the hairs of its legs. Lastly, a third kind of bee settles on the anthers, scoops out and devours every grain of pollen. After alluding to the fact that some flies are also pollen-eaters, the author suggests that certain humming-birds provided with feathers on their feet may possibly be the true fertilisers of Hippeastrum in its native country.

In the course of the discussion on this subject it was pointed out that humming-birds hover over the flowers and perforate them with their beaks, and hence that the tufts of feathers on the legs of some of the species are not likely to act as pollen-brushes. Mr. Morris related how in Jamaica the humming-birds, which at first had not attacked the flowers, suddenly began to split the tubes of the Cinchona flowers, and thus ensured the fertilisation of the flower. Mr. Burbidge called attention to the fact that in South America the Scarlet Runner does not set its fruit, but in this country it fruits freely, owing to the bees, which bore through the base of the flower—a curious illustration of a foreign flower rendered fertile by the agency of British bees. The meeting then adjourned.

NATIONAL AURICULA SOCIETY.

(NORTHERN SECTION.)

MAY 1ST.

THIS Show was held at the New Town Hall, Manchester, and was very successful. Auriculas were not staged in as large numbers as in previous years owing to the plants of several northern growers not being in full bloom, the weather having been against their development. Those shown were, however, very good in quality. In Polyanthuses the flowers were above the average both in quality and numbers, and some very fine seedlings were staged showing a decided advance. The following were the awards.

Six Auriculas, dissimilar. The first prize was awarded to the Rev. F. D. Horner, Lowfields, Burton-in-Lonsdale, Kirkby Lonsdale, for the following—F. D. Horner, a grand green edge, and this plant was selected as the premier flower in the Exhibition; Ebony, a fine black self raised by Mr. Horner; Laura, another of his seedlings, with good tube, paste, and violet plum colour; George Lightbody, very fine, and Greyhound. The second prize went to Mr. Wm. Bolton, Mersey Street, Warrington, with James Douglas (Bolton) very fine; Lancashire Hero, Sapphire, Mrs. Dodwell, fine; R. Headly, and Mrs. James Tinsley (Bolton), a self of a very promising character. Third, Mrs. Kirke Penson, Ludlow, with Sapphire, G. Lightbody, Conservative, Acme, a seedling black self, and a seedling green edge. Fourth, Mr. T. Buckley, Stalybridge, with Sapphire, G. Lightbody, Acme, Frank Simonite, Lancashire Hero, and Pizarro. Fifth to W. Broekbank, Esq., Didsbury, near Manchester, with F. D. Horner, Heroine, Rd. Headly, Mrs. Douglas, Heather Bell, and a seedling green edge; and sixth, Samuel Barlow, Esq., Stakehill House, Castleton, near Manchester, with six seedlings.

Four Auriculas, dissimilar, the Rev. F. D. Horner was again first with F. D. Horner, G. Lightbody, fine, John Simonite, and Iris, a grand deep violet self with gold tube and round paste; second, Mr. H. Wilson, Halifax, with Mrs. Potts, Mrs. Dodwell, Colonel Taylor, and George Lightbody; third, Mr. W. Brockbank, with Acme, Lord Lorne, R. Headly, and a seedling green edge; fourth, Mrs. Kirke Penson, with Prince of Greens, Acme, George Lightbody, and a seedling self; fifth, Mr. Wm. Bolton, with Frank Simonite, A. Meiklejohn, F. D. Horner, and Sapphire; and sixth, Mr. T. Barlow, with Complete, Reliance, F. D. Horner, and seedling self.

Pair of Auriculas, first, Mr. Simonite, Sheffield, with Heroine, fine and Conservative; second, Mr. Wm. Barnfather, Leek, with G. Light-

body and Negro; third, Mr. J. Beswick, Middldleton, with Acme and F. D. Horner; fourth, Mr. J. Butterworth, Middleton, with Trail's Beauty and A. Meiklejohn; fifth, Mr. E. Shepley, with Acme and Blackbird; sixth, Mr. W. Taylor, Middleton, with Trail's Beauty and C. J. Perry; and seventh, Mr. J. Stelfox, Stalybridge, with Pizarro and Trail's Beauty.

Pair of Auriculas (maiden growers), first to Mr. W. Barnfather, with George Lightbody and Negro; second, Mr. J. Butterworth, with Trail's Beauty and A. Meiklejohn; third, Mr. E. Walker, with Prince of Greens and a seedling self.

In the class for single green edges, Mr. W. Bolton won the premium with F. D. Horner; the Rev. F. D. Horner was first and seventh with Lancashire Hero and Ivy Green; Mr. E. Shepley, second, with Mayflower; Mr. W. Taylor, third, with Lovely Ann; Mrs. Kirke Penson, fourth, sixth, and eighth, with Colonel Taylor, Prince of Wales, and Prince of Greens; and Mr. C. Royds, Rochdale, fifth, with new Green. For grey edges, Mrs. Kirke Penson won the premium with George Lightbody, second with G. Lightbody, and seventh with C. E. Brown. The Rev. F. D. Horner was first with Lancashire Hero; Mr. W. Taylor, third, with A. Meiklejohn; Mr. W. Bolton, fourth and sixth, with Greyhound and Quicksilver; and Mr. W. Taylor, eighth, with Trail's Beauty. In the white edges the premium was awarded to Mr. Mr. H. Wilson for Mrs. Dodwell, also first and fifth for Miranda and John Simonite; Mr. C. Royds was second with Conservative; Mrs. Kirke Penson, third and seventh, with Acme and Silvia; Mr. B. Simonite, fourth, with Heather Bell; Mr. W. Brockbank, sixth and eighth, with Reliance and Smiling Beauty. For single selfs the premium was secured by the Rev. F. D. Horner, with Florence; he was also first with Gazelle; Mr. W. Brockbank was second with a seedling; Mrs. Kirke Penson, third, with Sapphire; Mr. W. Bolton, fourth, with a red seedling; Mr. C. Royds, fifth, sixth, and seventh, with Mrs. Douglas, E. Lancaster, and Pizarro; and Mr. J. Beswick, eighth, with Lord of Lorne.

Four alpine Auriculas, dissimilar, shaded.—First, Mr. S. Barlow with Mrs. Barlow (fine), Sir Trevor Lawrence, Charley Needham, and a seedling; second, Mr. J. Beswick with Queen Victoria, Utility, Emir, and Diadem; third, Mr. Wm. Brockbank with Q. Victoria, Mrs. Ball, Diadem, and a seedling; fourth, Mr. W. Bolton with Diadem, Placida, Unique, and an unknown variety; fifth, Mr. E. Stelfox with Queen Victoria, Diadem, J. Leech, and a seedling; and sixth, Mr. J. Butterworth with Conspicua, Diadem, Dazzle, and Prince. For single Alpines, shaded yellow centres, premium is Mr. Buckley with Diadem. First, Mr. Brockbank with Diadem; second, third, and fourth, Mr. S. Barlow with seedlings; fifth, Mr. E. Stelfox with Mercury. For single Alpines, white centres, Mr. W. Taylor premier with seedling, and Mr. W. Brockbank with Slough Rival, seedling, and Mrs. Dodwell.

Polyanthuses, three dissimilar black grounds.—First, Mr. W. Brockbank with Cheshire Favourite, Black King, and Black Cap; second, Mr. J. Butterworth with Cheshire Favourite, George IV., and Exile; third, Mr. S. Barlow with Favourite, George IV., and Exile; fourth, Mr. J. Thornley with Regent, Cheshire Favourite, and Exile; fifth, Mr. A. Mottershead with Regent, Cheshire, and Hero; sixth, Mr. A. Oldham with Exile, and second with a seedling. Three dissimilar red grounds.—First, Mr. A. Oldham with three seedlings; second, Mr. J. Butterworth with Regent, Lancer, and George IV.; third, Mr. W. Brockbank with Regina, George IV., and Ensign; fourth, Mr. W. Taylor with Regent, Lancer, and George IV.; fifth, Mr. G. Geggie with William IV., Lancer, and George IV.

Single Polyanthus, red grounds.—Mr. Henry Geggie, Bury, premier, with Lancer, and also first with Lancer; second, Mr. A. Oldham, with a seedling; third, Mr. J. Butterworth, with George IV.; Mr. G. Thornley fourth, with Prince Regent; Mr. W. Brockbank fifth, with Lord Derby; Mr. Henry Geggie sixth, with Sydney Smith; and Mr. W. Taylor seventh, with William IV. Single Polyanthus, black grounds.—Premier to Mr. J. Butterworth, with Cheshire Favourite; first, Mr. J. Hilton, with Exile; second, with Cheshire Favourite; Mr. W. Brockbank third, fourth, and sixth, with Black Knight, Lancashire Hero, and Jubilee; Mr. A. Oldham, fifth, with seedling, and seventh with James Lees. For twelve Fancy Auriculas, Mr. Samuel Barlow was first and Mr. William Bolton second. For twelve Fancy Polyanthus, dissimilar, Mr. S. Barlow was first, also for twelve Primroses.

Several collections of Narcissi and other miscellaneous plants were staged, including collections from Barr & Son of London; Dickson and Robinson, Old Millgate, Manchester; James Dickson & Sons, Newton Nurseries, Chester; and Messrs. R. Barker & Co., Frampton, Boston. There was a grand display of Cyclamens by Mr. John Odell, Hillingdon, Middlesex, also groups of greenhouse plants from Mr. John Hooley, Stockport; a collection of twenty or thirty Rhododendrons from Mr. Thomas Lloyd; and very fine cut Hyacinths from Messrs. Dickson, Brown, and Tait, Manchester. The following awards were made:—First-class commendation for Hyacinths, Messrs. Dickson, Brown, & Tait; first-class certificates for Narcissi to Messrs. Barr & Son; for Narcissi to Messrs. James Dickson & Sons; for Cyclamens to Mr. J. Odell; and for Crown Imperials to Richard Barker & Company, Frampton, Boston.

A GOOD SHADING FOR PLANT HOUSES.

THE time is drawing near when certain plants will require protection from the direct glare of the sun. So far this season we have not had too much sunshine for the majority of plants, and perhaps on that account some may suffer the more if we have a spell of unclouded sky, unless shading to a certain extent is applied.

There are various methods of shading glass structures. Roller blinds cannot be improved on I think, but everyone cannot obtain them. Thin limewash is sometimes syringed on the glass, but I cannot recommend it for general use, as it destroys both paint and putty. The following recipe I can recommend as being a good one:—½ lb. best glue, ¼ lb. Brunswick green, ¼ lb. white lead dust. Boil the glue in one quart of soft water, put the Brunswick green and white lead dust in while boiling, and allow the whole to boil for a few minutes longer, at the same time stir the mixture with a piece of stick.

It is much the best to prepare the shading a few days before it is required for use. When cold it will resemble thick jelly, and if it is fairly warmed through to soften it a little just before use by placing the vessel containing it on hot-water pipes, no difficulty will be found in painting the glass inside, not outside, the house, so as to form a heavy or light shade.

The glass should be perfectly dry when the shading is applied, otherwise it will not adhere to the glass. This is the third season we have used it here. The shading can easily be removed from the glass in the autumn with warm water, a sponge, or piece of cloth, afterwards syringing the glass with clear water. Two shillingsworth of the articles named would be sufficient for a fernery or stove "lean-to" 40 feet long and 14 feet wide.—G. GARNER, *Amberwood Gardens, Hants.*



JAPANESE REFLEXED CHRYSANTHEMUMS.

"A YORKSHIREMAN" appears a little troubled about certain varieties, such as Val d'Andorre and Criterion, being included in the list of sorts admissible in the new class. May I venture to suggest a way out of the difficulty which may not be so complex as to severely tax his faculty of apprehension? It is this—when he is making up his stand, if he has the temerity to exhibit, to leave out those to which he objects, and stage those which he considers more suitable. This will be the easier, since I do not see how twenty-four varieties can by any amount of squeezing be arranged in a stand of twelve blooms in not less than eight varieties. He has the option of excluding twelve or sixteen sorts and making up a "twelve" out of the remainder. If he has any difficulty in doing this I shall be glad to give him a helping hand, for I should not like the southerners to run away with all the prizes from the first N.C.S. provincial.—A SHEFFIELD BLADE.

A LITTLE longer reflection will, perhaps, convince "A Yorkshireman" that the difficulties in the way of constituting a good stand of Japanese reflexed blooms for exhibition are not so great as he appears to imagine. For my own part I fail to see that any trouble will be caused to either exhibitors or judges by the new class, and I anticipate that these classes both at the metropolitan and the provincial shows will form a very interesting feature. Really fine blooms of Elaine in contrast with the dark Jeanne Délaux would alone make an effective stand, and there are plenty of others in the select list to choose from. All the Judges will have to do will be to determine the respective merits of the blooms in each section, and it will make no difference whether they are shown elsewhere or not. Jeanne Délaux, Val d'Andorre, and Criterion are undoubtedly fine varieties for exhibition in the Japanese classes, and there would have been some cause for complaint if they had been excluded from those stands.—AN EXHIBITOR.

LATE CHRYSANTHEMUMS.

THERE is no difficulty in securing Chrysanthemums in bloom all the year round. I have had good Fair Maid of Guernsey until June simply by keeping the plants growing right on and cutting the blooms as they expanded. Madame Desgranges, cut down and restarted, and kept growing, produces growths which bloom in May, perhaps earlier, but I cannot say from experience. I imagine from the peculiar habit the latter has of throwing up fresh growths from the bottom that this sort might be flowered nearly the whole year round.—B.

RIPENED WOOD.

I QUITE endorse your correspondent, "W. B.'s, remarks at page 137, where he said the wood may be too ripe to produce good blooms, especially amongst incurved varieties, notably John Salter, Princess of Wales, Prince of Wales, and Mr. Brunlees. I have seen Faust very fine when the wood appeared somewhat green but still firm. The varieties of the Queen family produce finer and better shaped blooms when the wood is not too ripe. Princess Teck is similar. This subject was brought forward in the Journal some five or six years ago.

I have heard and read of many good Japanese varieties, but have

found no one that seems aequainted with Marsa. Yet it is a very handsome variety, purple, flaked white, with twisted florets in the eentre; the blooms are of good substance and keep well.—A NOTTS GROWER.

SHEFFIELD AND WEST RIDING CHRYSANTHEMUM SOCIETY.

THE second quarterly general meeting of the above Soeiety was held on Thursday evening last at the Society's meeting rooms, Mrs. Webster's Museum, Orchard Street, Sheffield, Mr. Jno. Haigh in the chair, when an exeellent paper was read by Mr. Joseph Walker on "Speeimen Plants, How to Grow and Traia Them," for whieh the essayist reeeived much well merited applause, with the unanimous and cordial thanks of the meeting. There was a good attendance, and several new members were added to the list already on the books. The Hon. Sec., Mr. W. K. Woodcoek, read letters he had received, stating that a party of members from the National Chrysanthemum Society had been arranged to visit Sheffield on Saturday, May 19th. The letters were received with very lively satisfaetion by all members present, and a Committee was appointed to make the necessary arrangements for ensuring the comfort and convenienee of the visitors during their short stay in Sheffield, also for aeeording to them a truly Yorkshire greeting from the patrons and members of the S. and W.R.C.S. —W. K. W.

NEW GLASS RANGES AT BYRKLEY.

THE engraving represents a range of glass houses Messrs. Foster and Pearson are erecting for Hamar Bass, Esq., at Byrkley, Burton-on-Trent. A new kitchen garden is being formed there of considerable extent. It is situated on one of the highest parts of the old Needwood Forest, and has a slight slope towards the south and west. The subsoil is stiff clay, which has caused considerable expense in preparing the ground. The main range of greenhouses is 330 feet in length, and eonsists of plant house 40 feet by 30 feet and 22 feet high in centre, four vineries eaeh 34 feet by 16 feet 9 inches, two Peach houses each 31 feet 9 inches by 12 feet, two Rose hous s eaeh 31 feet 9 inches by 12 feet, two greenhouses 28 feet by 18 feet 6 inches, and two stoves or Orchid houses 28 feet by 18 feet 6 inches. At the back of range are eool Orchid house 30 feet by 12 feet, fernery, and all the conveniences usual in a large establishment. As the ground falls very much at left hand end, the space under some of the houses has been utilised for Mushrooms, root stores, and other purposes. There are two ranges of half-span pits, as shown in the illustration, each 100 feet long, which will have ample heat for all purposes. The whole of the houses will be heated by three of the Chilwell Nursery boilers, made in the improved form with steel tubes. The work has been carried out under Robert Edis, Esq., architeet, London, and the whole of the details have been carefully arranged with the advice of Mr. Bennett, Rangemore Gardens.

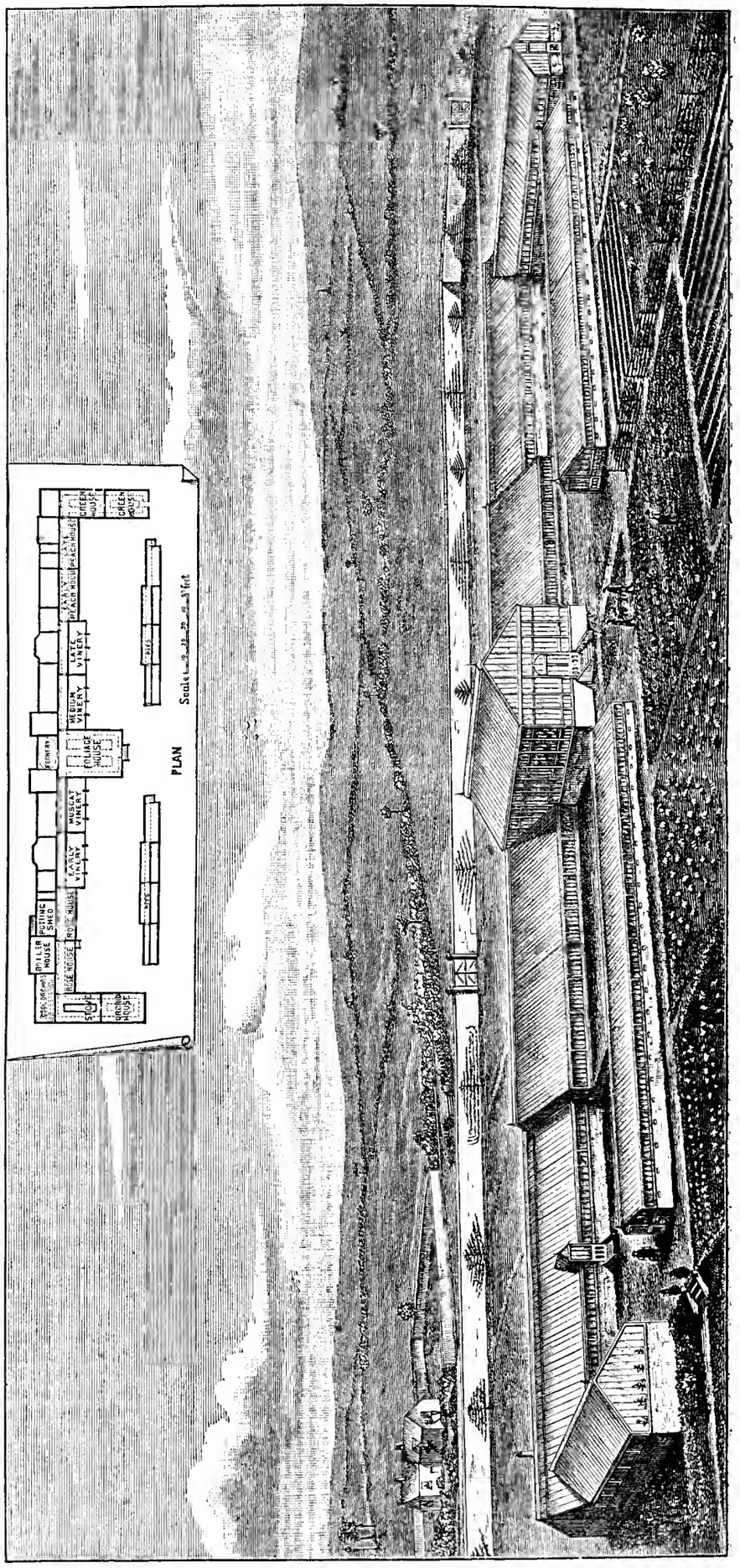


FIG. 51.—GLASS RANGES AT BYRKLEY.

INCREASING CROTONS.

THE present is a good time to increase the above, especially by mossing the stems, as they emit roots more freely at this season than at any other time during the year. It is a simple process, and is especially recommended where plants are grown out of bounds or are beeoming tall and unsightly. Good plants may be obtained in six or eight weeks in this way. In the first place make an incision by just running the knife round the stems 6 or 7 inches below the point, as circumstances will permit. Some sphagnum moss must be at hand, also a pan containing sharp silver sand with a slight admixture of leaf soil. The moss should first be moistened, when sand, &c., may be intermixed with it, then take as much as will form a ball round the incision about the size of a hen's egg when tied on closely and securely with raffia The plants should be placed in a brisk heat where shade from bright sunshine can be afforded. A Cucumber house suits admirably, and there the plants will fill the pots with roots in about five or six weeks. Cut off the stems immediately below the moss, and at once place them in 4-inch pots. In about fourteen days they will be ready for repotting, and may be exposed to more sun in order to colour them. By the above means well-furnished plants are obtained better than from cuttings.

Crotons prefer good fibrous loam and peat in equal parts, adding plenty of sand and charcoal, especially for plants in small pots for table decoration, &c. The plants colour better in a compost containing loam than in peat alone. I have found picturatus, interruptus, majesticus, Queen Victoria, Weismanni, longifolius, and longifolius aureus amongst the best varieties for table plants, although there may be some new ones I am not acquainted with.—J. P.



HARDY FRUIT GARDEN.

YOUNG FRUIT TREES.—These now require attention, and in fact must not he negleeted at any time through the growing season. In the first place all that are newly planted, and any that have not made satisfactory progress since they were moved, ought to have nearly or quite all the flowers eleared off them at once. Strong trees planted early in the season may be allowed to perfect a sprinkling of fruit, especially if not wanted to cover much wall or other space quickly, but to let those put out late make the attempt to swell off as many fruits as they will is very unwise. This phase of "gardener's greed" is one of the eauses for so many trees becoming stunted and comparatively worthless. A modcrate crop of fruit on trees that this season give signs of growing vigorously will, however, prevent grossness, and probably avert the necessity for root-pruning to induce fruitfulness.

PEARS.—Espaliers or horizontally trained trees of these or Apples will in most instances have formed a cluster of young shoots on the shortened leader. These should be freely thinned, so as to leave a good central shoot to continue the lead and two others for laying in on each side in an oblique rather than horizontal direction, these being intended to develope into another pair of permanent side branches. At the point of each already formed side branch several growths will attempt to form. Supposing no pruning had been resorted to as advised the strongest shoot will he at the point. Reserve this and duly lay it in, the rest being freely thinned out, and any left stopped at the third or fourth joint. All other lateral growth should also be thinned out or dishudded, leaving only those facing outwards, these also being stopped at the fourth joint. This will divert much of the sap to the support of the leading branches, and lead to the early formation of serviceable trees. Cordons of any description require much the same treatment as to thinning out and stopping, the main branch or branches only heing allowed to grow unstopped. Maidens as well as older trees planted last year, and not shortened in any way, made but little progress, but in addition to flowering freely give promise of growing strongly. It is the much-pruned trees that fail to bear well.

PLUMS.—Many of those planted against walls or fences this season, and not pruned in any way, will form little or no top growth during the summer, but they will make good progress at the roots and start away strongly next year. Should they start into active growth it will be necessary to remove some of the shoots and stop many more at the fourth or fifth joint, leaving those only to run out that are required for furnishing the wall space. Whether they start strongly this season or not, laying on the branches as received from the nurseries is a quicker method of furnishing the walls than the plan sometimes adopted of cutting back all the main hranches. Supposing they only form a few leaves and huds this season, next year they will grow vigorously and also perfect a few fruits. It is advisable to lay in young shoots on the upper side of the main branches, and according as they extend, other branches being required to fill in between the widening spaces. If the central branch has been cut back with the view of obtaining more shoots for the centre of the tree, timely selecting and thinning out should be resorted to, about three of the best placed shoots being laid in.

CHERRIES.—Those against walls are usually pruned and trained similarly to Plums, the only exeeption being the Morello. The main branches of all but this variety should be clothed as soon as possible with short fruiting spurs, this being by no means difficult of attainment. They ought to be thinly trained, the main branches being not less than 9 inches apart, more shoots to be laid in wherever they are required. Thin out and stop as advised in the case of Plums. The Morello branches may be trained rather more thickly, also fan-shaped, on the upper side of these laying in a number of young shoots, these being destined to bear fruit for one year only and then cut away if not needed for furnishing, their places being taken by other younger branches saved the same year. Trees received and planted with eight or more well regulated growths not shortened in any way will not make much progress this summer, but next season will make up for this disappointment. Thin out the young shoots of any starting well now, leaving one near the base on the upper side of each branch, another about the middle, and the leader. If there is a central branch one, or, if needed, two shoots may be laid in on both sides of these. A few of the foreright shoots on the main branches, or those growing outwards from the wall, may be lightly stopped, these fruiting next season, but the side growths not required for furnishing should be removed at once.

PEACHES AND NECTARINES.—When strong, well-halanced, fan-shaped trees are planted it is advisable to shorten hack the branches to ahout one-half of their length. It is late to prune them, but they may be disbudded, and that answers better than late prnning, the disbudded or upper half of the hranch being cleanly cut away when the trees are in full leaf. Disbudding must also be resorted to in the case of the lower half of the branches, one shoot at the base on the upper side and a leader only being reserved, unless there is good room for another near he leader. These branches should be carefully laid in, and if the season is at all favourable they will ripen well and be fruitful next year. Young trees, the second year after planting, are apt to form shoots that are too rank and sappy to he serviceable. These may be detected quite early, as they are usually from the centre of a triple wood bud, and if removed early one of the side buds may take its place with advantage. Later on strong shoots may be depressed and checked in growth, the removal of several leaves also checking them. If maidens are planted for the purpose of being grown into fan-shaped trees these ought to have been cut back to within 6 inches of the union of the scion with the stock. If this has not been done closely disbud all the upper growth, and reserve about three shoots only on each side of the lower portion of the stem, these to be kept laid in to their full length. Those to be trained with a central stem in an oblique direction, and fruiting branches laid in right and left, should have a central growth reserved in addition to the six or more side branches. This method of training is to be commended to those who wish to furnish a high wall quickly, and also where the trees do not last many years.

APRICOTS.—These may be trained and pruned on the spur system, similarly to Plums, or they may be trained and fruited exactly the same as Peaches. The former is the method most generally adopted, but the latter, though it entails rather more labour, is the most profitable in the long run.

FRUIT FORCING.

PEACHES AND NECTARINES.—*Trees Started at the New Year.*—The fruit is stoning, and must not be subjected to a higher temperature than 60° to 65° hy artificial means, commencing to ventilate at 65°, and not allowing 75° to be exceeded without full ventilation. Tie in the shoots as they advance, removing superfluous growths, as it is important that no more be trained in than can be fully exposed to light and air. If the shoots are crowded thin them well as soon as the stoning is completed. Allow one fruit to every square foot of trellis covered with foliage, which will be one to each shoot of last year, although vigorous shoots may be allowed to carry two fruits; by apportioning the fruit according to the vigour of the trees or degrees of vigour the evenness of vigour may be maintained throughout the tree. After stoning, maintain a good moisture in the house, and water the inside border copiously, which in well drained borders will not be required less than once a week, mulching the surface with about 2 inches thickness of short half-decayed manure. Unless it is desired to accelerate the ripening, continue 60° to 65° as the night temperature, and 65° artificially by day in dull weather, and 75° with sun heat, closing at the latter with plenty of moisture in the house. In a high temperature and moist atmosphere Peaches swell to a great size after stoning, but are not so tempting in appearance nor so well flavoured as those in less heat and moisture and with freer ventilation.

Trees Started in February.—The fruit of these will soon be commencing stoning, and should have the number reduced, leaving two fruits on strong shoots, but one will be sufficient on the weaker. The fruit retained must, in all instances, be best situated for receiving air and light. Thin the shoots where crowded. The temperature by artificial means may be kept at 55° to 60° at night, and 60° to 65° by day artificially, ventilating from 65°, and fully between 70° and 75°.

Trees Started in March.—The fruit is swelling and requires to be freely thinned. It can now be seen which fruits have taken the lead. Two or three will be ample to leave on strong shoots, and proportionately less on weaker growths. Afford liquid manure to weakly trees, but vigorous trees being more prone to cast the fruit must have clear water only. Remove all superfluous shoots, the remaining shoots being trained to the trellis as they advance.

Late Houses.—The fruits are well set, and syringing will be needed in the morning and on fine afternoons to rid the trees of the remains of the flowers. Commence thinning when the fruits are the size of horse beans, removing the smallest and worst placed, leaving very few more fruit than will ultimately be required for the crop. Dishudding and heeling-in the shoots should be carefully attended to. A temperature of 50° at night will be safe, and 55° by day artificially, ventilating freely about that, unless it is desired to hasten the crop when a temperature of 55° at night and 60° to 65° by day artificially may be secured, with 70° to 75° by day, ventilating from 65°.

Unheated Houses—There has so far not been any frost to interfere with the prospect of the crop, which promises to be abundant, indeed the fruits have set splendidly, fully nine-tenths more fruit than will be required for the crop. A moderate syringing on fine mornings will be a great assistance in ridding the fruit of the remains of the blossoms, but there must not be any attempt at an afternoon syringing for the present, and no sprinkling practised likely to cause a moist temperature at night, as the weather is not yet to be depended on, and a sudden severe frost occurring whilst the house is moist is very much more likely to prove disastrous to the crop than if the atmosphere is dry. Ventilate at 50°, not allowing an advance above 65° without full ventilation, and close at 50°, or before if there is a prospect of frost at night. If water be necessary apply it sufficiently early in the day to allow of the surface becoming fairly dry before closing time.

PINES.—Changeable weather necessitates careful attention in the cultivation of Pines, especially as regards plants with the fruit in an advanced condition, a moderately high and moist temperature being necessary to their well being, which condition renders them more susceptible of injury, the effect of sudden outbursts of sun telling disastrously, especially upon the crown, which is not infrequently scorched if the ventilation is not carefully attended to. Large, well-finished fruit are only to be obtained by attention to details, especially when the

plants are cultivated in pots. Watering will require attending to once a week, but avoid indiscriminate periodical waterings. Plants that have heat at the roots by means of hot-water pipes need more water than those having the heat furnished by means of fermenting material; the former should have water as often as required, on every occasion employing some stimulant. 1 lb. of guano to twenty gallons of water is a suitable quantity. Admit air at the top of the house at 80°, and maintain the temperature during the day at 80° to 90°, closing at 85°; but unless it be desirable to enlarge the crowns do not quite close the house. Fire heat must be employed to prevent the temperature falling below 70° at night, and to raise it to 75° in the day, the bottom heat being kept at 80° to 90°, or with the bottom heat steady, a few degrees variation in the atmosphere is not of great consequence. Syringe the house and plants two or three times a week according to the weather, and maintain the atmosphere in such a condition as is likely to secure the perfect development of the fruit.

STRAWBERRIES IN POTS.—There must not be any lack of moisture at the roots of these plants, as when the sun is powerful the fruits are apt to have the skin dried, and they do not swell truly afterwards. After the fruit commences swelling a brisk moist atmosphere is essential to insure good fruit, supplying liquid manure liberally until the fruit changes colour, when it must be discontinued and watering less at the roots. Admit air freely whenever the weather is favourable, avoiding drying currents. Nothing is so advantageous as well thinning the fruits, especially of the large varieties, such as President, James Veitch, Dr. Hogg, and British Queen, also those very handsome varieties Sir Joseph Paxton and Sir Charles Napier. Sir Harry also attains to a good size when well thinned, and is one of the finest Strawberries for forcing. A dish of Strawberries composed of a dozen to the pound is very much more taking in appearance than when the number is double for the weight. See that late plants are free from aphides, and fumigate if there be the least trace of them. Do not keep fruiting plants a day longer in the houses than is absolutely necessary, as it is hardly possible to force Strawberries without their being infested with red spider. Water the plants twice a day, and in bright weather three times.

CHERRY HOUSE.—Cherries are ripening rapidly and the fruit must be kept dry, but keep the surface of the borders moist by damping with the syringe, air being admitted constantly, or condensation will seriously affect the fruit. Damping the border is calculated to mislead as regards its condition, which at this stage must be quite moist, therefore if necessary a thorough supply of water must be afforded without delay. Tie in the shoots as they lengthen, and stop those not required for training-in at about the fifth leaf. Black aphides can be kept under by dipping the leaves or shoots in tobacco water. Ventilate freely on all favourable occasions, and when the external conditions are unfavourable recourse must be had to the heating apparatus to ensure a circulation of warm dry air. Netting will be necessary over the ventilators to prevent birds attacking the Cherries.

CUCUMBERS.—A clear growth is of the utmost importance in the successful cultivation of fruits. If aphides appear fumigate twice on consecutive evenings, having the foliage dry, but the floors well damped. Red spider is almost sure to appear. Remove the worst infested leaves, and keep the atmosphere charged with ammonia vapour by damping the floor in the evening with guano water, supplying the roots with the same about twice a week. The hot-water pipes may also be moderately coated with sulphur. Be careful that the plants do not suffer through insufficient supplies of water, applying it at the same temperature as that of the bed. Plants in bearing all the winter will now be showing signs of exhaustion, and had better be removed and young plants placed in without delay. Assist young plants which show signs of weakness by removing the staminate blossoms and the first fruits, stopping at every third or fourth joint, removing all weakly and superfluous growths. Shading will be necessary for an hour or two in the middle of the day when the sun is hot, especially houses facing south, but shade early to prevent flagging. Houses with the roof-lights facing east and west will not require shading. Little or no fire heat will be required by day, shutting the valves at about 8 A.M., and opening them again at about 5 P.M. Syringe the plants moderately between 3 and 4 P.M., keeping a good moisture all day by damping the floors.

Sow seed for raising plants to occupy pits and frames, a fair bottom heat being first secured by using the less decomposed material from Seakale, Vine borders, or exhausted hotbeds, which, with about a fourth of fresh material, will afford all the bottom heat now required. The days as well as nights lately have been cold, in which case close pits and frames as early in the afternoon as is safe, not allowing the temperature to exceed 90° to 95°, and employ good night coverings. See that a good bottom heat is maintained by duly renewing the linings. Prepare for planting out ridge Cucumbers under handlights, the plants being hardened off previously.

PLANT HOUSES.

Polystichum proliferum.—Mature fronds pegged down in early autumn will by this time have produced numbers of well-rooted young plants. These should either be potted singly, or two or three together, in 2 and 3-inch pots. In these sizes few Ferns are so useful for room decoration. Grow them in the shade for a time in an intermediate temperature until well established, and afterwards they will succeed admirably in a cool but shady frame. When required solely for winter use they must have from September an intermediate temperature, so that steady growth will be the result. Unless they are kept growing during the winter the mature fronds have a rusty appearance instead of that light green colour that is so characteristic of the young fronds. Very ornamental specimens are produced for decoration by placing two or three of these little plants in the centre of 4-inch pots, and then surrounding them with Selaginella Kraussiana (denticulata of gardens).

Pteris tremula.—Small plants still in pans and boxes may be placed at once in 3-inch pots, and from these when ready transferred into 5-inch pots. The last size is most suitable for this variety, for in smaller pots it does not develope itself sufficiently well to be attractive. Lomaria gibba does well in the same size, as well as many other Ferns which need attention at the present time. Pteris serrulata is most useful in 3-inch pots, and its crested form is doubly ornamental in pots 2 inches larger. The whole of these will thrive well together under the shade of Vines or Peaches if no better position can be accorded them. When required for furnishing purposes the object should be to push them on in their early stages, and as they attain a sufficiently large size grow them as cool as is consistent with keeping them in good health. It must be remembered that plants last in rooms double the length of time when grown and hardened for the purpose than when removed direct from heated structures.

Small Adiantums.—For purposes of decoration in small pots A. concinnum and the old A. cuneatum are two of the most serviceable. The former if ready now for 2-inch pots will be shapely plants by autumn in 5-inch pots, while the latter will be of a useful size in pots 1 inch less. If the small pots in which they are first placed can be plunged in some moisture-holding material to prevent the soil drying quickly they will make rapid growth. Grow these varieties where the syringe can be kept from them. They may also be grown with a fair amount of light, so that they will be hardy from the first. All the shading needed is to screen them from the strong rays of the sun. They will grow much more rapidly in loam, leaf mould, and sand, than in a mixture of loam and peat.

Selaginella Kraussiana.—A good stock may be prepared in 3 and 4-inch pots as well as in shallow 6-inch pans for decorative purposes during the autumn and winter. Fill the pots and pans with light material and dibble small shoots thickly over the surface. If placed in a shady position and dewed once or twice daily with a fine-rose can the surface will be quickly covered. To insure the plants lasting well in rooms they must be grown to the desired size and then stood in a cool house prior to use.

Isolepis gracilis.—Some of the plants that have been in pots for six or eight months will be considerably past their best. These may have all the old leaves removed, and if divided into two or three and placed in the same size pots they will be again of useful size in about two months. Others may be divided into very small pieces, so that they will be well established plants in 3-inch pots by autumn, which can be kept in good condition until the following April or May. Nothing is gained by growing the plants in heat, in fact they draw up weakly, and directly they are removed the leaves fall about, destroying their effective appearance. They will grow in any cool structure that is moderately close, where they can be kept moist and shaded from the sun. The compost must consist of loam, leaf mould, a little manure and sand.

Cyperus.—The plants of C. alternifolius in 2-inch pots and now growing freely may be transferred at once into 5-inch pots, providing a compost of loam, one-seventh of manure and sand. In this size they will be found invaluable for groups in halls and rooms during the winter. Grow them in heat for a time until well established, and then as cool as is consistent with keeping them advancing slowly. Moderately matured heads if inserted in small pots in heat will yet make good plants by autumn. In a moist atmosphere they soon form roots, and young growths push from the crown. If the heads are placed in a tank of tepid water in the stove they soon commence forming roots and can afterwards be potted. By either of these means better furnished plants are produced than is the case by division of the crowns.

FLOWER GARDEN.

Tuberous Begonias.—Roots of these that have wintered satisfactorily without being set in heat or coddled in any way, will be sufficiently advanced to put out with the other bedding plants. They start better in, and are transplanted more readily from boxes of good loamy soil, but they must not be crowded together, and should be not less than 4 inches apart each way, the larger tubers requiring more room. This admits of their being transplanted with a good ball of soil about the roots. Seedlings raised early in the year may be grown to a good serviceable size by the end of May, though not if they are kept long in pans. They ought first to have been pricked off in pans, and when of good size transplanted into boxes. A rather rich light loamy soil with plenty of sand added suits them, and if carefully shifted into these boxes in preference to either pans or small pots, being disposed not less than 3 inches apart each way, and kept in gentle heat, useful plants will result.

Beet.—A good strain of garden Beet, such as Dell's Crimson, Carter's Perfection, and Veitch's Improved Black is very effective in the flower garden. It forms a capital edging to beds filled with Marguerites or other large plants, and contrasts well with golden or silver variegated or flowering plants in a ribbon border. The seed may be sown now either where the plants are to grow or in boxes of light soil, and thinly in each case. Seedlings when about 4 inches high can be transplanted readily from boxes or from the open ground.

Violets.—Old beds of these are not nearly so profitable as comparatively new plantations, and it is advisable to replant some every spring. The Czar or any of the newer forms of Russian Violets are the most reliable, but in favoured districts the double flowering Marie Louise, the

Old Tree, and Queen of Violets are fairly hardy and florifcrous. The former section have nearly ceased flowering, leaf growth taking the place of flowers. These may now be lifted, divided, and replanted in rich loamy soil. If given an open position the pieces may be dibbled out firmly 9 inches apart, a distance of 12 inches dividing the rows. Nothing is gained by crowding them, and if they are watered in very hot dry weather or in any way mulched with manure, short grass, or other suitable material, they ought to grow sturdily and flower well for the next three seasons. The doubles to be similarly treated after they have ceased to flower. Many err in planting Violets, especially the singles, in shady or cool spots. It is the sturdy plants grown in full sunshine that are the hardiest and give the most flowers.

Lawns.—A good sweeping or bush-harrowing followed by a heavy rolling is very beneficial to these. The former distributes the worm-casts and dislodges moss, and the rolling fixes many of the grasses that annually root afresh. Where the turf is thin or poor it may be greatly improved by a liberal use of soot, or a thin sprinkling of bone manure or guano may well be given, the rains washing these in. It is not yet too late to sow a mixture of lawn grass seeds as sold by most seedsmen, this being a good method of improving thin turf. Stir the surface with a rake prior to sowing, cover with a little fine soil, roll frequently after the young plants appear, and mow with a scythe two or three times before the machine is put on. Grass is now growing rapidly, and unless the machine is used early it will be first necessary to go over it with a scythe.

THE BEE-KEEPER.

COMB OR EXTRACTED HONEY?

The sale of sections seems to be gradually growing less. Comb honey of the best quality will fetch a fair price, but anything of an inferior character is hardly saleable at all. There are many reasons to account for the public taste, which seems to prefer the extracted honey to that which still remains sealed by the bees themselves in combs of spotless purity. The retail dealer has never regarded section honey with a very kindly eye, and we need hardly wonder that the less easily damaged bottle honey is preferable in his eyes to the more beautiful and very easily damaged honey in the comb. It is not every man of business who deals in honey who can find fit and safe storage for sections; and yet, unless he has a large demand, it very commonly happens that the goods will be damaged by exposure to sun, light, damp, or draught. They may be injured by the slightest fall, and dust will effectually tell against their ready sale. The bee-keeper, too, has some difficulty to contend with in the production of the peerless white comb which we sometimes see exposed for sale in window or case. He has to take special care when desirous of obtaining sections of good saleable quality, not only to keep the wood clean and white, but to prevent the possibility of the hard midrib, which is not seldom found in the produce of apiaries where no special care is taken to use only the very purest foundation of the most perfect thinness and make. A few days' want of care in neglecting to remove the finished combs will, in many instances, damage the product beyond possibility of remedy, while at the end of the season—and the end may come abruptly and without much warning—not a few unfinished sections remain to tantalise the bee-keeper when he thinks what might have been had the honey flow continued but a few days longer.

The production of comb honey in sections has, no doubt, increased to a wondrous extent during the last few years, but we do not think that the increase in the production of honey in the comb has been in anything approaching to equal proportions with that of run or extracted honey. Here, again, the reasons are, no doubt, manifold. The first that strikes us is that there are few bee-keepers who are able to produce with certainty sections of first-class quality—well sealed, well filled, clean and spotless. Others, again, knowing the difficulties they have to contend with, prefer to produce the more homely and more easily saleable article, even if they realise a less price for the produce when the time for selling it arrives. If the market for section honey once becomes really dull by reason of the supply exceeding the demand, or as certain bee-keepers would say, by reason of the supply not being distributed among the population, then extracted honey will certainly be the more paying article.

These remarks are, of course, only preliminary to the deductions which we desire to draw from these facts; for facts they appear to be so far as we can judge. If a bee-keeper can secure a market beforehand for sections of good quality, or even if he can see his way to disposing of them, he may, unless he has the misfortune to over-estimate his market, with confidence turn his attention to the production of comb honey, but unless he has a considerable experience in doing so we certainly advise him to proceed with caution. Success will beget success. Failure may succeed success, and if it does the bee-keeper must then reconsider his position. Sections are so much more perishable in their nature, and so comparatively difficult to produce, that a practical bee-keeper will only attempt to produce them when the relative price of comb and extracted honey warrant him in the supposition that there is "something in it." With extracted honey at 6d., and comb at 8d., we should trust in the main to the latter, but if there was any real and seemingly lasting change in the relative prices obtained for the two articles, it would at once be our duty to turn our attention to the lower priced yet more easily obtained product. It may be we are wrong in thus sounding a note of warning; it may be that in certain localities the demand for sections is on the increase. We shall rejoice to hear that this is so, for honey in the comb has a far greater attraction for us than the more commonplace yet excellent extracted or run honey.

Whichever kind we desire to obtain, the method is the same as that which "A Lanarkshire Bee-keeper" and others have frequently pointed out in long past years when this Journal—the mother of principles in bee-keeping—held the field as a journal of advanced views in bee-keeping and kindred topics. I may be allowed here to offer an apology to "A Hallamshire Bee-keeper" for my apparent movement from a position which I took up a few months ago when laying down that, however honourable it was for a man to use his energies for the benefit of others, it was of no practical moment to the bee-keepers of to-day who was the originator of a given appliance, principle, or method, provided that they have the advantage of it. In writing on the introduction of queens quite recently a quotation was made from a work by Mr. S. Simmins of Rottingdean, not with the intention of awarding to that gentleman the palm of inventing the method, but simply because the language was terse and clear. It was careless, and has, no doubt, led to some little misconception; but the mistake was quite unintentional, as it is certainly not my desire to say that any individual was the first to discover the principle, since I have not sufficient time at my disposal to investigate a subject of such delicacy and importance to the originator of the principle, whoever he may be, and to his friends.

The discussion on queen introduction, although it has certainly been against the method described in Mr. Simmins' own words, has been both interesting and profitable, and when the fitting time arrives I shall not fail to make further experiments with a view to clearing up, for my own satisfaction, certain points which have been urged by those who are well able to speak upon the subject, and whose words carry great authority in any discussion on the best methods of introducing queens. If I find myself in the wrong I shall not hesitate to confess my error, and to thank those who have not only enabled me to see my mistake, but have endeavoured to set my feet on a pleasant road leading to certain success.—Felix.

THE HALLAMSHIRE LAW.

In the issue for April 19th our friend, "A Lanarkshire Bee-keeper, still asserts my law is not new. He was kind enough to write me privately to the same effect, and said Mr. J. Lowe's articles appeared in the Journal between 1862 and 1865. I at once began to search the *Cottage Gardener and Journal of Horticulture* from 1869 to 1870 inclusive without finding any trace of it. I did find, however, several advocating giving the bees sufficient time to miss their old queen before

offering them another, but this is not the law. The quotation from his essay, page 58, does not apply, as the whole sentence reads as follows:—"The only safe method of joining queens is to allow sufficient time to elapse, so that the bees miss the queen; then after that cage the alien queen in one of 'A Renfrewshire Bee-keeper's' cages, between combs, and on the third day if queen cells are in progress excise, after which, or should none be built, the queen may be released." Here we see the law is clearly not alluded to, as the presence of unsealed brood is implied, or where would the "queen cells" have come from "on the third day?" Our friend has also named the late Mr. Woodbury as the author, but his articles in the Journal just before he died clearly show that he had no faith in it as a safe and sure method; as he advocated dividing a strong stock, removing the queenless half to a fresh stand, so as to draw the old bees off, and cage the fresh queen for two days amongst the remaining young ones; this he recommended as the safest plan to follow. Therefore I cannot admit that he had grasped the law, for at the end of two days the old bees, left queenless and broodless on the old stand, would have accepted the fresh queen, even more surely and certainly with less trouble than the young half. When trying this plan in my younger days I was always very unfortunate, as every bee that could fly left the old stock hive and the brood as soon as they missed their queen, and so left too few bees to care for or keep the brood warm. When their old queen is left with them there is not this difficulty or risk.

I wrote our friend to inform him the result of my search, and saying I could not understand it at all. I know very well he has had the same idea for years, and has been so near the law as to advise in his articles that it was unsafe to liberate a queen if the bees had the means of rearing another. And even in his articles to the Journal as late as March 1st and 8th last, he advises the excision of all queen cells on the ninth day, and then caging the queen in one of his "safety" cages; this, it will be noted, is an application of the law. When I published it two years ago I quoted our friend as one who had been working it in a way though with a cage. Now while his cage is safe there are others that are not so, as I have pointed out in the Journal for April 12th; but the evil is this, everybody fancies a different cage, most of which allow eggs to drop through, and as they cannot see the difference they use them and so lose their queens. The law is to enable everyone to foretell the result, and so dispense with all cages, for to use a "safety" cage in a safe process is like fireproofing inflammable material, disinfecting disinfectants, &c.

Well, our friend kindly wrote back an explanation. Here is what he says:—"Your 'law' is not unlike a person cooking some savoury dish, putting things in their proper place and time, but at the same time I can see nothing new, further than the way you have put it, so that everyone can understand it. I believe your articles have thrown more light on this subject than all other writers have ever done." Now, if this point or principle is what he is contending for—viz., that there is nothing new in it, or nothing novel, except the way it is put, there is then no "bone of contention" between us, for we really agree. I know others have had the same idea, have deprived the bees of their queen and all means of rearing a successor, and successfully enthroned a stranger; but what have these people said about the most important element of time before offering them the alien? Why, just this. "Give the bees sufficient time to miss their queen," as quoted by our friend and Mr. Raynor; and as everyone has different ideas as to what is "sufficient," whether in time or money, therefore one may have given five or six days and succeeded; another may have not given as many hours, and so invariably failed, and if these happened to be big "guns" in the bee fraternity, then the idea would soon be scouted.

If I have explained the idea so that all may understand it and apply it with confidence and certainty, then it is to all intents and purposes "new." A thing or process may be new by simply eliminating some error. As to whether it is new, at least in its effect, I will just quote from a paper by the Rev. George Raynor, read on the 31st of July, 1886, before the British Bee-keepers' Association on "Queen Introduction," which was, some time after it had been published and discussed both in the Journal and the *B. B. J.*, in which it was hotly opposed by Dr. Walker and Mr. C. N. Abbott, its late editor.

Mr. Raynor's paper is published in the *British Bee Journal* for August 12th, 1886, and was freely copied into many other journals. From page 367 I make the following extract:—"The only other method of direct introduction which demands notice is that which is said to have been originally discovered by Huber—viz., that 'If a colony of bees have no queen and no means of rearing one they will invariably accept a fertile queen when presented to them.' This rule requires, of course, an absence of brood and eggs, which seems to be the only stipulated condition. No matter how many or how few, how old or how young the bees may be, or at what season of the year the introduction is made, it is bound to succeed." Then he says, "If anyone wishes to make the experiment, and has no objection to losing his queens and demoralising his bees, let him deprive a colony of its queen and its combs, and place it upon empty combs and those containing honey only. *Give the bees time to discover the loss of their queen*, and offer them another at the entrance or the top of the hive, and she will be at once seized and encased, and either maimed and rendered useless or killed outright. This, and not a kindly reception, is what invariably takes place in my experience, and I have tried the method many a time in my earlier days—in those happy days gone by. Colonies which have been long queenless are the least disposed of all others to receive a queen." No one in the room questioned what he said, as all endorsed his statements.

The law had been much ventilated at that time, and as it is two years ago, and many will be inclined to try it this season, I think I cannot do better than copy it out, so that a comparison can be made with the part I have italicised—viz., "Give the bees time to discover the loss of their queen," which, as I have said, is no direction at all. In the law I have laid down forty-eight hours as the minimum, while if the queen is presented within twenty-four or twenty hours the result will always be as Mr. Raynor says, as Huber found out 100 years ago; while if an interval of forty-eight hours at least take place, and the conditions are as required in the law, I will defy anyone to show me a failure.

THE LAW REPEATED.

"If a hive of bees have no queen or means of rearing one (that is, have neither queen, eggs, unsealed brood, nor queen cells in their hive) they will invariably accept a fertile queen at the entrance or dropped in from the top, providing they have been deprived of such means of requeening themselves forty-eight hours.

"No matter how long they have queenless, or how old the bees may be, or what time of the year it is, nor even if fertile workers be present, unless they have begun to lay eggs no failure will ever result, so that there is no exception whatever to the law, nor must the queens ever be caged, the application of it can be varied scores of ways."

Surely there will be no difficulty in understanding and carrying out the above. Before I published it bee-keepers all the world over were crying out for a simple and safe way of enthroning their queens. I have not given them simply a "way to do it," but a law, so that they can manufacture their own "ways."

A CAUTION.

Some are asking if it is impossible to lose their queens when introducing them in accordance with the law, that I think I cannot do better than point out how queens may be lost, none of which prove the law to be wrong or liable to any exception. In 1887 I had a virgin Syrian amongst some black bees. They were not strong—four Woodbury frames. She was the only yellow bee in the hive. After she had been in a month I looked to see if she was laying. She could not be found, nor any trace of her. I looked many times with equal success, so I came to the conclusion they were queenless, and I dropped in a black queen. This was killed, which made me think at the time the law had exceptions. However, subsequently I found this identical Syrian in the hive laying. Since then I have seen many virgin queens take wing and fly away when opening the hive, and the novice might very easily think the hive was queenless when it had a queen; though she might be out somewhere when he was looking for her. When in doubt lift a comb out with adhering bees, put the queen amongst them, if she is balled then you may be sure they have a queen or means of rearing one. If the bees form a circle or ring round her, or move on one side to let her pass, or more particularly commence to vibrate their wings, which is quickly taken up by all the bees on the comb, then you may safely depend on it they were queenless.

Strong stocks, prepared in accordance with the law, during the time young queens are on the wing from nuclei, should always be treated thus to be sure, as such stocks will most certain requeen themselves naturally in accordance with the law, at the expense of some other hive less strong than themselves. I have seen such cases every season, and though I can tell at a glance whether they have done so or not, still everyone may not be able to tell that way. I had a very annoying experience last summer. A stock belonging to a friend lost its queen; the virgin to take her place also getting lost, put the stock hopelessly queenless. He told me the bees were running about the front of the hive as if they were mad. I at once said if such was the case they were hopelessly queenless, and to oblige him I went to examine it. I found such to be the fact. It was very strong, all brood hatched, and the remains of some dozens of queen cells. Subsequently I gave him a Cyprian queen to drop in; this he found turned out dead. When he told me and showed me the dead queen, I at once said the stock had requeened itself at the expense of one of the others. I went to help him find it. I first opened the hive in question, when I found a fine hybrid queen that had just begun laying. This gave us a hint to examine the hybrid lots only. I pointed to a skep and asked, "When did that swarm?" "Three weeks last Sunday," said he. "Ah," said I, "the queen is from that." I tossed them a queen, they received her all at once went into the hive, and in less than an hour were in full work providing for the brood the queen was laying eggs for.

In the fall or early spring there is not that risk of stocks requeening themselves in a natural manner, but still there is the risk of the stock, supposed to be hopelessly queenless, being headed by a virgin queen, which may perchance be on the wing. Only this afternoon, April 28th, I found two virgin queens in hives I supposed were headed with laying queens. Sealed brood were in both hives. I expected one queen being deposed early this season, as she was a very old one, but I know no reason for the other, as she was of last season's rearing. I at once removed these queens, and the stocks will be ready in two days to receive queens expected from abroad. I found a strong stock of Carniolians queenless, no brood or eggs. I suppose the queen had run out of the hive with the bees, when they turned out for their first airing. They very often do this, and this queen must have done this very trick last year, as I found her one morning about 20 yards from her hive. Being satisfied they were in the condition of my law to receive a queen, I gave them a Cyprian from another stock—which will have the queen cells destroyed on the eighth or ninth day,

to be ready to receive a queen from Mr. Benton—in about thirty seconds the whole stock set up a noise that could well be heard 30 yards off, so delighted were they. These were old bees, and I do not know how long they had been queenless.—A HALLAMSHIRE BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

John Laing & Sons, Forest Hill, London, S.E.—*Catalogue of Begonias, Orchids, and General Plants.*

Corry, Soper, Fowler, & Co., 16 and 18, Finsbury Street, London, E.C.—*Illustrated Trade Catalogue of Garden Requisites.*

Hogg & Wood, Coldstream, Berwickshire.—*List of Farm Seeds.*

TO CORRESPONDENTS

*** All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Pruning Roses (*F. C. S.*).—We do not publish the story, as it is not quite good nonsense.

Report of Auricula Show (*W. B., Leek*).—We are greatly obliged by your consideration, but a report of the Show was in type when your letter and enclosures arrived.

Watercress (*Kins*).—You will perhaps find the information you need in a reply to "W. P." Mr. Shirley Hibberd's pamphlet on this subject is, we think, published by Groombridge & Sons.

Odontoglossums (*R Pennell & Sons*).—All the varieties sent are good, and two of them are excellent—namely, the broad fringed form of O. crispum and one of the O. Ruckerianum style. They are well worth preserving.

Flower Bed Design (*Journal*).—As a rule all the dark coloured carpet plants show to better advantage surrounded with a bright line of contrasting colour, the width to be determined by the size of the beds. A narrow margin of Golden Feather kept pinched would look well round the central mass of Lobelia and Centaurea. There is nothing to show whether the design embraces a number of panels for one large bed, or whether there are seven separate beds on grass or gravel. If the beds or panels are large enough they should all be margined with the most suitable plants that may be provided for furnishing the beds.

Stocks and Pansies for Spring (*J. E.*).—The East Lothian Stock would in all probability suit your requirements. You cannot sow them too soon now, and as your situation is exposed grow them in soil that is not rich. In February or the beginning of March a thick layer of horse droppings or cow manure laid about the plants and on the surface of the soil will cause them to develope good spikes. As you suggest, they will be easier managed sown in a box, thence pricked into pots, using very light soil, and when well established plant out where they are to remain and bloom. Sow the Pansies in June in a moist position in the open ground, and transplant to get strong for flowering. Thomson's work on the Vine is published by Blackwood, and can be had, if in print, through a bookseller. We think Taylor's "Vines at Longleat" is out of print.

Strawberries not Swelling (*J. W. T.*).—Fumigation directly after the fruit was set would affect the Strawberries prejudicially; indeed the cause of their becoming brown and hard is due to sudden drying of the atmosphere either by fumigation or a sudden influx of air, as not infrequently occurs on bright weather following a dull and cold period. Exposure to very bright sun after dull weather, particularly when the plants are near the glass, is also a cause of the fruit becoming brown and hard. The only remedy is a moist and more genial condition of the atmosphere. No amount of water at the roots will compensate for excessive evaporation from the fruit.

Swanley—the Gardeners' Orphan Fund (*H. J. C.*).—Although the notes referred to sound to you "more like a fairy tale than a sober statement of facts," as you believe them to be, it is a very stern fact that as much more might have been written, and must have been written, to give anything like a full description of the establishments in question. Mr. Ladds continues to use his horizontal tubular boiler for heating his glass structures. We shall be very pleased to see you when you come to the Gardeners' Orphan Fund dinner, and to be of such service as we can to you and your friends. The Committee hope that as many gardeners as possible will bring friends with them on the occasion. The Fund cannot fail to do "much good, and meet a real want in the horticultural world," and you have the honour of being one of its originators.

Double Primulas (*C. W. N.*).—As you would see towards the close of Mr. Divers' exhaustive paper on the cultivation of these plants, the larvæ of the destructive weevil Otiorhynchus sulcatus occasionally causes the death of some by eating their way from the roots into the stems; but we scarcely think this is the cause of some of your plants "going off." When they get old, or produce a good length of woody stems above ground, as in the example sent, the sap vessels become so contracted that they are no longer able to convey the requisite amount of nutriment for sustaining the plants in health. The leaves then fail, one after the other turning yellow and shrivelling. There is a correlative failure of root action, and disease culminating in death ensues. The fungus on the stems is not the cause of the unhealthy condition of the plants, but the result of it. Turfy loam and leaf mould or cocoa-nut refuse packed round the stems prevents their shrinkage, and the plants are kept healthy the longer.

Curtailing Boiler Flue (*Ferndale*).—The "engineer" no doubt constructed the furnace on the principle that it might be required to burn coke, cinders and other description of fuel, and unaware that anthracite coal would be used. The principle in setting a boiler is to concentrate as much heat as possible on the boiler, having exposed to the direct action of the fire as much boiler service as practicable. Contracting the flue over the boiler will only increase the draught, causing the heat not abstracted by the boiler to more speedily ascend the chimney; therefore, if you have plenty of draught it would be well to leave the flue as it is, so that as large an extent as possible of the boiler surface may be exposed. Top flues over saddle boilers are not, however, of much benefit beyond preventing the cooling of the boiler surfaces, assisting in maintaining the heat about the boiler, and are not employed with boilers that present a large surface to the direct action of the fire. Have you not a damper to regulate the draught?

Propagating Euphorbia jacquiniæflora (*P. Banks*). — The plants after flowering should be kept dry, but not so as to cause the wood to shrivel, and be cut back to firm ripe wood. From this shoots will push when the plants are placed in gentle heat, as they should be in March, and when these are between 4 and 6 inches long they should be taken off with a heel, the base pared smooth, and inserted about an inch apart around the sides of 5 or 6-inch pots, be placed in a gentle bottom heat and covered with a frame or bellglass, keeping them close, moist, and shaded from bright sun until rooted, as will be known by their growing freely; they must then be inured to the air of the house, and be potted singly and grown in a very light position. To prepare the cutting pots drain them with crocks one-third their depth, place a little cocoa-nut fibre over the drainage, and fill to within three-quarters of an inch of the rim with a compost of light loam, leaf soil, sand, and dust charcoal in equal parts, surfacing with half an inch of pure sand. Apply water through a fine rose, and an hour or two afterwards insert the cuttings, giving them a gentle watering. They should be inserted about a couple of inches deep.

Marking a Lawn Tennis Court (*A Constant Reader*).—For "single court" the width is 27 feet, and 78 feet in length. It is divided across the middle by a net, the ends of which are attached to the top of two posts, which stand 3 feet outside the court on each side. The height of the net is 3 feet 6 inches at the posts, and 3 feet at the centre. At the end of the court, parallel with the net, and at a distance of 39 feet from it, are drawn the base lines, the extremities of which are connected by the side lines. Half way between the side lines and parallel with them is drawn the half-court line, dividing the space on each side of the net into two equal parts, called the right and left courts. On each side of the net at a distance of 21 feet from it, and parallel with it, are drawn the service lines. The above are the dimensions given in "Lawn Tennis," by Lieut. S. C. F. Peile, published by Messrs. Blackwood & Sons, London. For "double court" the width is 36 feet, and within the side lines at a distance of 4½ feet from them and parallel with them are drawn service side lines, which are not drawn beyond the half-court lines. In other respects the "double court" is similar to the "single court" described above, but to aid the marker a diagram is necessary, for which you are referred to the work named above.

Watercress Beds (*W. P.*).—You do not say whether you wish to grow Cresses in or out of water. If to be grown in water the bed may be any length, the width being 9 feet. As you require a large bed a suitable size would be 260 feet long and 9 feet wide. The soil should be stiff, so as to form a suitable receptacle for holding water. A trench is made of the required dimensions, and need not be deeper than to secure a regular depth of water of 3 or 4 inches. In a stiff soil there is little difficulty in getting the trenches to hold water, but in a porous soil it is necessary to use clay at the bottom and sides of the trench, and when clay is used there must be space allowed for about 4 inches depth of good soil. In adhesive soil all that is necessary is to make the bottom quite firm, also the sloping sides, with a slope from one end to the other, so that the water will have a gentle run—*i.e.*, flow in at one end and run out at the other. The bottom being dry, water is allowed to run in to soften it, and this whether the soil is the original stratum or fresh.

Any good garden soil will do. The cuttings or small sets should be placed at a distance of 3 to 4 inches apart, and having roots they will grow away quickly, water being let in to keep the plants thoroughly wet. In the course of a week dress with well decomposed cowdung, spreading it evenly over all the plants, and press it down with a heavy board to which a long handle is fixed obliquely similar to a turf beater. The water is then raised to 3 inches, or better 2 inches at first, and never should be more than 3 inches. No further attention is necessary until gathering, unless weeds appear, when they must be removed. In summer the plants will afford a gathering every fifteen to twenty-one days, but in winter the gathering will be less frequent. After every cutting a dressing of manure—viz., decayed cowdung, about six bushels to the size of bed named, is given, spreading it over the plants and beating it down with the rammer before mentioned. In twelve months from planting the Watercresses they are exhausted, the manure forming a tolerably thick layer at the bottom of the trench, and tends to raise the level. This should be thrown out upon the border adjoining or separating the trenches, or otherwise employed as manure. The bed should be renewed annually. September is a good time to make the beds and to plant. For growing Cresses in borders a moist soil should be chosen, and shady but not with overhanging trees or shrubs. Dig the earth fine, and form a ditch all round, or trenches may be drawn with a hoe, and filled with water until it becomes like mud. Cover with an inch depth of drift sand, and then insert the slips 4 to 6 inches apart, watering well until established. They will be ready for gathering from in a few weeks. The shoots should be cut and not picked. Cresses grown in this way are not so mild flavoured as those grown in manured trenches in water, but the quality depends in a great measure upon the attention in watering, which cannot be too liberal. Some prefer the "land" Cresses, from their being free from aquatic insects.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*A. Lewis*).—The Apple is Winter Colman. We do not know of a cheap pamphlet such as you suggest.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*F. S.*).—Goldfussia isophylla. (*W. P.*).—1 and 2, Insufficient without flowers. 3, Send again when it is in flower. 4. Megasea purpurascens. 5, Francoa sonchifolia. 6, Alyssum saxatile. (*W. J.*).—1, Brassia verrucosa. 2, Begonia læte-virens. (*J. C. R.*).—1, Narcissus incomparabilis Stella. 2, N. poeticus ornatus. 3, Anemone fulgens. 4, Anemone appenina. 5, Anemone nemorosa flore-pleno. (*W. P.*).—1, Doronicum caucasium. 2, Ribes aureum. 3, Ribes sanguineum.

COVENT GARDEN MARKET.—MAY 9TH.

OUR market still keeps steady, supplies all round being good. Business remains the same.

FRUIT.

	s.	d.		s.	d.
Apples, ½ sieve	2	6	to	4	6
Nova Scotia and Canada barrel	10	0		18	0
Cobs, 100 lbs.	45	0		0	0
Grapes, per lb.	3	6		6	0
Lemons, case	10	0		15	0
Oranges, per 100	2	0	to	5	0
Peaches, dozen	18	0		20	0
Pears, dozen	3	0		6	0
St. Michael Pines, each	3	0		5	0
Strawberries, per lb.	2	0		6	0

VEGETABLES.

	s.	d.		s.	d.
Artichokes, dozen	1	0	to	2	0
Asparagus, bundle	2	6		4	0
Beans, Kidney, per lb.	1	6		0	0
Beet, Red, dozen	1	0		2	0
Broccoli, bundle	0	0		0	0
Brussels Sprouts, ½ sieve	3	6		4	0
Cabbage, dozen	1	6		0	0
Capsicums, per 100	1	6		2	0
Carrots, bunch	0	4		0	0
Cauliflowers, dozen	3	0		4	0
Celery, bundle	1	6		2	0
Coleworts, doz. bunches	2	0		4	0
Cucumbers, each	0	4		0	7
Endive, dozen	1	0		2	0
Herbs, bunch	0	2		0	0
Leeks, bunch	0	3		0	4
Lettuce, dozen	0	9	to	1	3
Mushrooms, punnet	0	6		1	0
Mustard and Cress, punt.	0	2		0	0
Onions, bunch	0	3		0	0
Parsley, dozen bunches	2	0		3	0
Parsnips, dozen	1	0		0	0
Potatoes, per cwt.	4	0		5	0
„ Kidney, per cwt.	4	0		0	0
Rhubarb, bundle	0	2		0	0
Salsafy, bundle	1	0		1	6
Scorzonera, bundle	1	6		0	0
Seakale, basket	1	3		1	9
Shallots, per lb.	0	3		0	0
Spinach, bushel	1	6		2	0
Tomatoes, per lb.	1	6		2	6
Turnips, bunch	0	4		0	6

PLANTS IN POTS.

	s.	d.		s.	d.
Aralia Sieboldi, dozen	6	0	to	12	0
Arbor vitæ (golden) dozen	12	0		24	0
Arum Lilies, dozen	6	0		12	0
Azalea, dozen	12	0		24	0
Cineraria, dozen	6	0		10	0
Coleus, dozen	4	0		6	0
Cyclamen, dozen	12	0		18	0
Dielytra, per dozen	12	0		18	0
Deutzia, per dozen	6	0		9	0
Dracæna terminalis, doz.	30	0		60	0
„ viridis, dozen	12	0		24	0
Erica, various, dozen	9	0		18	0
„ ventricosa	18	0		24	0
Euonymus, in var., dozen	6	0		18	0
Evergreens, in var., dozen	6	0		24	0
Ferns, in variety, dozen	4	0		18	0
Ficus elastica, each	1	6	to	7	0
Foliage Plants, var., each	2	0		10	0
Fuchsia, dozen pots	6	0		12	0
Genista, per dozen	6	0		12	0
Heliotrope, dozen pots	6	0		9	0
Hydrangea, dozen	9	0		18	0
Lilies Valley, dozen	18	0		24	0
Lilium doz.	12	0		18	0
Marguerite Daisy, dozen	9	0		12	0
Musk, dozen pots	2	0		4	0
Myrtles, dozen	6	0		12	0
Palms, in var., each	2	6		21	0
Pelargoniums, dozen	6	0		18	0
„ scarlet, doz.	4	0		6	0
Poinsettia, dozen	0	0		0	0
Spirea japonica, doz.	6	0		12	0

CUT FLOWERS.

	s.	d.		s.	d.
Abutilons, 12 bunches	2	0	to	4	0
Anemone (Fulgens), 12 bunches	3	0		6	0
Anemones (French), 12 bunches	1	6		4	0
Arum Lilies, 12 blooms	2	0		4	0
Azalea, 12 sprays	0	6		1	0
Bouvardias, bunch	0	6		1	0
Camellias, 12 blooms	1	0		3	0
Carnations, 12 blooms	1	0		3	0
Cowslips, 12 bunches	1	0		2	6
Cyclamen, 12 blooms	0	4		6	0
Daffodils, Double, 12 bchs	1	0		2	0
„ Single, 12 bchs	1	0		3	0
Daisies, 12 bunches	2	0		4	0
Epiphyllum, 12 blooms	0	0		0	0
Eucharis, dozen	2	0		4	0
Gardenias, 12 blooms	1	6		4	0
Hyacinths, French, 12 bunches	12	0		15	0
„ (Dutch), box	1	6		4	0
Lapageria, coloured, 12 blooms	1	0		1	6
Lilium longiflorum, 12 blooms	2	0		4	0
Marguerites, 12 bunches	2	0		6	0
Lily of the Valley, 12 sprays	0	6	to	1	0
Mignonette, 12 bunches	3	0		6	0
Narciss, various, 12 bchs	2	0		4	0
Pansies, 12 bchs	1	0		2	0
Pelargoniums, 12 trusses	0	6		1	0
„ scarlet, 12 trusses	0	4		0	6
Polyanthus, 12 bchs	1	0		3	0
Primroses, 12 bunches	0	6		1	0
„ (double), bunch	0	9		1	6
Roses, Red, 12 blooms	2	0		6	0
„ (indoor), dozen	1	0		3	0
„ Tea, dozen	1	0		2	6
red, dozen (French)	0	0		0	0
„ yellow	2	0		4	0
Spiræa, bunch	0	6		1	0
Stephanotis, 12 sprays	4	0		6	0
Tropæolum, 12 bunches	1	6		2	0
Tuberoses, 12 blooms	1	0		2	0
Tulips, dozen blooms	0	3		0	6
Violets, 12 bunches	0	4		0	9
„ (French), bunch	1	0		2	0
„ (Parme), bunch	2	0		3	0
Wallflowers, 12 bchs	2	0		4	0
White Lilac, per bunch	5	0		6	6



SYSTEMATIC FARMING.

A PURPOSE and plan in agriculture, as much as in anything else, if well considered and entered upon with all due deliberation and care, should form the basis of successful practice, and we are certainly wont to accord respect to the man who so acts. But before trusting him entirely, and taking any of his proceedings as a guide for our own, it is certainly worth while inquiring if he achieves results at all commensurate with the apparent excellence of his system.

We fell into some such train of thought as this in our walk round the home farm before sitting down to write this article, for we had before our eyes the results of systematic farming, and we are bound to own they were unsatisfactory. We may explain that at Michaelmas, 1886, about eighty acres of arable land were added to the home farm. These eighty acres had been in the hands of a tenant who, upon the expiration of his lease, demanded a reduction of 50 per cent. upon his rent as an offer to re-hire the land. Such a concession was felt to be uncalled for, and so the land came in hand. Now the late tenant farmed about a thousand acres adjoining this land, all which was kept strictly under a four-course shift. He was an old practitioner who gave his entire attention to his work, riding over most of his land twice daily, and he had the reputation of being an excellent farmer. But to be quite fair, and judging solely from the results before us, we could not regard them as being worthy of praise, rather did we find much to which exception must be taken. The land was wet in some parts, and the whole of it was poor and foul with weeds. By judicious drainage and the application of manure a speedy remedy was found for the first two faults, but the third was by no means so easily set right, for some of the fields are so badly infested with Charlock that it will be a labour of years to eradicate it. This land, be it remembered, had been for many years under a rigorous four-course shift, for which, in addition to having a regular change of crops, the special advantage is claimed of being "summered," or subjected to a long fallow every fourth year, which means that it is left uncropped, ploughed several times, and so it is said to be thoroughly rested and cleaned.

To take another example, we may turn to a farm of nearly four hundred acres which came in hand last Michaelmas. Knowing as we did that land so left is quite certain to be low in fertility, we have taken care that every field has had a full dressing of manure before a crop was sown in it, but we cannot so readily apply a remedy for foulness, and some of it is so badly infested with couch

grass that we found the bailiff much disheartened when we were there a few days ago. He was engaged in trying to get some twelve acres ready for sowing Mangolds, but the soil was so permeated with twitch that it was turned up by the plough in compact clods, and there was nothing for it but drying by sun and wind, and a free use of cultivators, rollers, harrows, and ploughs. All the labourers were at work, too, with forks wherever they could use them, and we hope by getting off as much twitch as possible before sowing, by having the rows so wide apart as to admit of a free use of horse hoes, that most of the weeds will be destroyed before midsummer. This farm, too, had been under the four-course shift for sixteen years, yet some of the land is more foul with couch grass than any we have yet had to deal with. The plea of wet summers cannot be advanced by way of excuse for this foulness of the land, for there never was a better opportunity for the destruction of weeds than we have had during the last three hot dry summers. No ; it is just owing to the careless, easy-going practice so common to farmers, and, we may add, to the fact that two-thirds of them have too much land. Far better would it be for the man farming a thousand acres moderately well to reduce his holding by half, and to cultivate that in the best possible manner. Depend upon it his profits would be doubled, and prosperity would crown his efforts, despite low prices and foreign competition.

Shall we ever see the time when the nature of the soil and its treatment will be rightly understood and acted upon? How sadly is every effort at improvement clogged and hindered by ignorance and prejudice. There is still a majority of men of fair intelligence who regard the muck cart as an indispensable adjunct to good farming. If only the stern lessons of adversity tend gradually to teach them better, it is all we can hope for. Science or precise knowledge, tempered by common sense in combination with intelligence and energy, will no doubt eventually do for agriculture what it has done and is doing for so many other things. Above all things we must have thoroughgoing practice or our best efforts will be in vain. Is it too much to ask for land clean, dry, and fertile? Three very simple things are they not? Yet they are indispensable to success.

WORK ON THE HOME FARM.

May Day saw most of the Barley well above the surface. Weeds, too, were abundant, and wherever Clover or mixed seed were to be sown we decided either to hoe or harrow up the Charlock. With sun and wind the drills might follow in the course of a day or two, and then it would be well to follow with a light roller. Some farmers prefer using a heavy Cambridge roller, but we object to that because of the severe bruising of so much of the young plant. It is unquestionable that much harm is done to the Wheat plant too by using heavy rollers upon it after it is in full spring growth. The Wheat generally is a full strong plant, and we have only one partial failure of about 5 acres on a heavy land farm, and this has been drilled with Oats. Upon mixed soil the Wheat is so forward that several extra hands had to be taken on in order to get the hoeing done in time to avoid damage to the corn. This work is all paid for by the acre, at a price proportionate to the labour required, some hoeing being much heavier than other. In any case payment by measure and not by time is best in the interest of all concerned, and if a good foreman can be had we like him to select his own men and to be responsible for the work being well done. It always answers best to attack the weeds as early as possible, for growth proceeds with such rapidity at this season of the year that prompt action must be taken to keep abreast of the work. Corn hoeing began so late in the season that by the time it is finished the men will be wanted upon the Mangold land, where weeds are generally plentiful enough.

We laid down two pieces of land to permanent pasture last year; one was on heavy land, the other on medium rich loam. Upon the former we have only half a plant, and more seed must be sown; on the latter there is a full plant which is so forward in growth that we shall soon have the sheep and lambs in folds upon it. They will be passed over quickly in small folds and have trough food as well, and this process will be repeated as often as necessary till autumn. A field of Sainfoin sown last year upon rather poor land will be eaten down by sheep in folds shortly, we then intend saving the second growth for seed. The bailiff of that farm, upon receiving orders about the Sainfoin, told us he had heard that sheep folded upon Sainfoin would destroy it by "eating the heart out of the plant." We had to explain that the sheep must be in small folds—a hurdle to a sheep—and have a fresh fold every night. A field so folded, and then kept for seed last year upon the home farm, has now a fine strong full plant, forward in growth.

THE LATE MR. J. C. MORTON.

WE regret to learn that Mr. John Chalmers Morton died suddenly on May 3rd last. He has been Editor of the *Agricultural Gazette* since its commencement, and in the issue of this periodical for May 7th the following account is given of Mr. Morton's life and work, together with an excellent portrait.

"Mr. J. C. Morton was the son of Mr. John Morton, agent, for upwards of fifty years, of the Earls of Ducie, upon their Gloucestershire estate. Mr. John Morton married the sister of the celebrated Dr. Chalmers, and we recollect his mentioning, with obvious gratification, that, upon his introducing himself to an English Quaker gentleman who had spent some time in Edinburgh, and was an enthusiastic admirer of the great Scotch preacher, he had replied, 'Oh, I know all about you: you are a son of the Doctor's sister, and his *favourite* sister.' Mr. J. C. Morton was educated at the Merchiston Castle School, Edinburgh, of which his uncle (Charles Chalmers) was the head master. After leaving this, he attended some of the University classes. He made himself distinguished as the best mathematician among his generation of students; taking the first prize given for mathematics by the University of Edinburgh. At this time Professor Low was holding classes for agricultural students; and Mr. J. C. Morton's name was included among these. Before he reached his nineteenth birthday he was summoned home to undertake the direction, under his father, of the Whitfield Model Farm just established in the immediate neighbourhood of Tortworth. Here he acquired an insight into the best English (and Scotch) farm practice; and, as he was fond of asserting, went to the first meeting of the R.A.S.E., and, with two exceptions, to every subsequent one. In 1844 the proprietor of the *Gardeners' Chronicle* (then edited by Prof. Lindley), determined to establish, in conjunction with it, the *Agricultural Gazette*; and they selected the young manager of the Whitfield Model Farm to undertake the post of Editor. He came to London in 1844; and 1300 consecutive weekly numbers of the paper were brought out, without a single break, under Mr. Morton's personal supervision. He then took a holiday for six weeks, and only twice since has he suspended the labours of his full, industrious life, to give himself the change of a brief visit to the Continent. He never seemed to wish for a holiday. He fulfilled, in addition to his Editorial functions, the duties of Inspector under the Land Commissioners; and, in his constant journeyings to and fro to visit new buildings and improvements (effected, on land estates, by the aid of the office, 3, St. James's Square) seemed to have found the 'differentiation' in his labours which served him in the place of rest or amusement.

"In 1885, with fifty of the most eminent men in their several lines, Mr. J. C. Morton brought out the Encyclopædia of Agriculture. He also, for a while—when the late Mr. H. Thompson occupied the post of ornamental editor of the R.A.S.E. Journal—did the chief work of an editor, contributing at intervals many papers of very real value, of his own writing. His paper—on the varieties of Wheat—is still the most complete treatise on this important subject. He also served for six years with Dr. Frankland and Sir William Denison, as the Royal Commissioners for inquiring into the pollution of rivers. Throughout a long and varied career, Mr. J. C. Morton, more than anyone we ever met, secured the confidence and good will of all whom he encountered. But it is not necessary to dwell on this feature of his character in these columns. How often has he told here himself of his encounters and conversations, of the queer people he has met with; and has he not proved to demonstration to what good purpose he could turn their quaint communications? It was characteristic of Mr. J. C. Morton that he never 'pushed himself,' though no one was more eager than he to recognise merit in anybody else, and to press the claims of deserving folk in every way that lay in his power. Much as he had to do, and much as he was forced to write, he always found time to go to the aid of anyone whom he thought required his assistance, and to send words of encouragement to those to whom he found that he could not go."

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE. 1883. April and May.		9 A.M. Barometer at 32° and Sea Level.	Hygrometer. Dry.	Hygrometer. Wet.	Direction of Wind.	Temp. of soil at 1 foot.	IN THE DAY. Shade Temperature. Max.	Shade Temperature. Min.	Radiation Temperature. In sun.	Radiation Temperature. On grass	Rain
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday	29	29.849	48.8	44.1	S.	45.9	54.7	45.0	92.8	41.8	—
Monday	30	29.712	51.8	46.8	S.E.	46.0	64.8	41.4	107.5	36.5	—
Tuesday	1	29.469	54.4	48.9	S.W.	47.6	54.8	49.1	86.3	40.5	—
Wednesday	2	29.895	50.1	45.0	S.W.	47.3	55.4	39.6	93.2	33.9	0.282
Thursday	3	29.817	49.0	43.2	S.W.	45.4	54.2	41.2	99.4	35.3	0.12
Friday	4	30.188	48.9	44.0	W.	46.2	58.9	38.4	110.3	32.2	—
Saturday	5	30.307	51.3	45.6	E.	47.2	59.9	37.7	103.8	30.7	—
		29.881	50.6	45.4		46.7	57.8	41.8	99.0	35.9	0.384

REMARKS.

29th.—Generally dull.
30th.—Delightful spring day.
1st.—Fine and generally bright till 11 A.M., afterwards overcast and gusty, with sunshine at intervals.
2nd.—Fair morning with some sunshine; wet afternoon; bright in early afternoon, but wet again later.
3rd.—Sunshine and showers.
4th.—Cloudy till nearly noon, clear and fine after.
5th.—Frost early, then bright and warm.

Rather warmer, but still not up to the average, no high temperatures have yet been recorded.—G. J. SYMONS.

ROYAL HORTICULTURAL SOCIETY.

HOWEVER interesting the fortnightly Shows of the Society may have been in the exhibition hall at Westminster, it cannot be said they have attracted a large share of public patronage. It is doubtful if a number of small shows at short intervals represent a safe and sound policy; and certainly they do not impress visitors, who in these days of great efforts expect something more imposing. At the time of writing, preparations are in progress for representing the work of the Society on a larger scale and in a different position; and when these lines appear the result will be seen under canvas in the Temple Gardens on the Thames Embankment. A better site for a flower show could scarcely be imagined, and as the Lord Mayor is expected to lead the way, a large following should be insured, provided the present bright weather continues, but a falling barometer is not encouraging. We can only hope for the best—summer-like days, a fine Show, and a great success.

The Society's officials and friends have concentrated their efforts upon this gathering, and the opportunity has been afforded by the courtesy of the Treasurer and Benchers of the Inner Temple of utilising the garden in a most appropriate manner, and providing the citizens of London with a novel and beautiful Exhibition. The Inner Temple Garden contains about 3 acres of land adjoining the Thames Embankment, from which it is separated by ornamental iron railings. The greater portion is laid out as lawn, which looks as fresh and neat as that in any country or suburban garden. Near the Embankment and at the upper part are flower beds, now gay with highly coloured and varied Tulips, but which are filled at other periods with different seasonable attractions. The great popular period of this Garden is in November, when a glass house at the lower part of the ground is occupied with Chrysanthemums, to inspect which the public have been admitted for a number of years. There the late Mr. Broome won considerable fame in the cultivation of these plants, and there Mr. J. Newton has ever since provided an annual Show that has materially assisted in extending the popularity of Chrysanthemums as town plants. For some time free Chrysanthemum Shows were also provided in the Middle Temple Garden, both under Mr. Dale and Mr. Wright, but these have been discontinued in the past two years to the regret of many persons. During the summer months the Benchers of the Inner Temple also most generously throw the garden open during the evening, a privilege which many persons and children "in city pent" most heartily appreciate.

The Inner Temple Garden, therefore, possesses a special horticultural interest, though an exhibition of such importance and magnitude as that which will be opened to-day has never previously been held within its bounds. Historically, the Temple records, most briefly treated, would fill a large volume, for many eminent literary men and great lawyers have been, and still are, connected with it. One matter, however, is worth a passing reference—namely, the tradition perpetuated by Shakespeare that it was in this garden the Wars of the Roses originated. In his Henry VI. a scene is introduced in the Temple Gardens, where "the Earls of Somerset, Suffolk, and Warwick, Richard Plantaganet, Vernon, and another lawyer," indicate their respective favour for the Houses of York or Lancaster by plucking white or red Roses. As Mr. J. C. H. Flood remarks in his interesting little work, "An Hour in the Temple," "the 'other lawyer,' like the fox in the fable who had caught a cold and could not smell, appears to have remained neutral, as a wise lawyer would under such circumstances. This incident is extremely effective in a dramatic sense, but it is founded on nothing more than coinage of the poet's brain, and there is no tradition in the case. It is an amusing scene, in one sense, for it seems to indicate that even so grave a project as a civil war could not be undertaken without 'counsel's opinion,' because there were two lawyers present, and the 'parties' had previously been talking matters over in the Hall. This, it appears, was not sufficiently private for such a discussion as they were pursuing, hence we may infer that in Shakespeare's time the Temple Garden must have been a far more secluded spot than it is now."

But we must turn to the preparations for the Show, which have kept Mr. A. F. Barron and his assistants busy for the past few days. Two marquees of most spacious proportions have been erected, one over 200 feet long and 30 feet wide, parallel with the Embankment, and the other at right angles with this, 160 feet long, 60 feet wide, and about 30 feet high. An area of something like 16,000 square feet is thus covered with canvas, and it will be seen how large a number of exhibits can be accommodated, but most judiciously abundant space will be afforded for visitors. In the entrance marquee, the right hand side will be mainly devoted to market growers' groups contributed by Messrs. May, Hayes, Sweet, Page, Poupart, Hawkins & Bennett, Rochford, Gregory & Evans, and others. These will be arranged upon the grass, a stage on the opposite side being filled with collections of cut flowers, Messrs. Barr and Son, T. S. Ware, J. Walker, and Collins Bros. contributing Daffodils and hardy flowers. A bright array of well grown plants may be expected here, and tastefully arranged with small useful Palms and Ferns they will afford some effective groups and a brilliant vista.

The other marquee will be occupied with larger plants, and there one side will be appropriated to Roses in pots from Messrs. W. Paul & Son, Waltham Cross; C. Turner, Slough; Paul and Son, Cheshunt; Jackman, Woking; and Rumsey, Waltham Cross. It is anticipated that fully 1600 square feet will be filled with Roses, and this alone will be an exhibition of considerable beauty. Upon the opposite side will be miscellaneous groups in competition and otherwise, while upon the centre stage the Orchids and other choice plants are to be arranged.

Baron Schröder, Sir Trevor Lawrence, Major Lendy, Mr. Phillbrick, Messrs. Sander & Co., and Mr. J. Cypher promise groups of Orchids from their valuable collections, while important contributions from Messrs. J. Veitch & Sons, B. S. Williams, J. Carter & Co., J. Laing & Sons, and H. Cannell and Sons will add to the interest of the Exhibition. Pelargoniums from Messrs. Turner & Hayes, Calceolarias from Messrs. James and Cannell, Caladiums from Forest Hill, and a collection of Channel Island produce from Mr. Munro, will all constitute attractive features. This large marquee if well filled will have a grand appearance, and such an experienced show superintendent as Mr. Barron knows exactly how to make the most effective use of plants and groups in a spacious tent.

The schedule enumerates twenty-four classes, including three for groups of plants arranged in a space not exceeding 150 square feet, from nurserymen, market growers, and amateurs respectively. To Orchids six classes are devoted, three being for groups of Orchids, one for a collection of cut flowers, and the other two for collections of Masdevallias, with Odontoglossums and Cattleyas, with Lælias. Roses in pots and cut blooms have two classes, Azaleas, Pelargoniums, Clematises, Palms, fine-foliage plants, exotic and hardy Ferns, hardy plants and Calceolarias, with the miscellaneous non-competing exhibits, which always occupy so large a space at shows of this character. It was originally intended to confine the Exhibition to one day—Thursday—but it was subse-

quently decided to extend it to Friday evening, and an ample opportunity will thus be afforded to all who are desirous of visiting a beautiful and extensive display of plants and flowers. The groups of Covent Garden Market plants will be specially worthy of inspection by gardeners in these days of plant growing for room decoration, as the best examples of culture will be represented. We understand the Duke of Bedford provides prizes for collections of "market plants," for which there will be spirited competition, and the arrangements are sure to be very effective, but of these prizes no information has been supplied to us.

We have pleasure in making this Exhibition as widely known as possible, though no request for its publicity has been made to us by the officials, nor did we see any bills or circulars referring to it till Tuesday afternoon. We know from the letters of correspondents that the existence of the Show was not generally known early in the week, and that gardeners coming to London to see the "Botanic Show" on Wednesday, made arrangements for Thursday in ignorance of the fact that an Exhibition under the auspices of the Royal Horticultural Society was to be held in the Temple Gardens on that day.

The Show will be opened to the public at 1 P.M. to-day (Thursday), the price of admission (by ticket) being 2s. 6d. until 4 P.M., after which, and on the whole of the second day, the admission will be 1s. The entrance is on the Embankment, and readily reached either from the Temple or Blackfriars station, the former being slightly the nearer of the two.

It should be added that the officials of the Royal Horticultural Society have been freely assisted by Mr. Newton, gardener to the Inner Temple Society, and every facility has been afforded in making the necessary arrangements.

NOTES ON VENTILATION.

To know how and when to ventilate can only be mastered by carefully observing its effects upon different plants, together with a thorough knowledge of the constitutions and requirements of the plants being treated. The quantity of air we can give a house of plants will also very much depend upon how we begin with them, and the time of year they are started into growth. A house of Melons, for instance, planted in January must of necessity make their growth with very little ventilation, and that helps to render their leaves thin and fragile, consequently they must be more carefully ventilated than those planted two months later, because, to begin with, the latter would have more light and air, which would result in a robust constitution, and hence be capable of enduring sudden changes of temperature with impunity.

There are very few operations more difficult to teach young assistants than that of ventilation, simply because they fail to realise its importance further than to prevent the rise or reduce the already too high temperature. Very much more than that, however, is included in "giving air," for the manner in which it is done often determines the difference between a healthy and a sickly house of plants, while it is certain we should hear of and see less mildew, red spider, aphides, and other insect pests if the ventilators were always rationally worked.

Like many other gardening operations, it is impossible to give detailed instructions for ventilating that can be strictly applied under all circumstances, hence only a few general principles can be pointed out, and some practical observations made upon them, while these will be useful in proportion as they are intelligently applied. Medical advisers tell us that it is not when getting hot, but when cooling, that the system is the most susceptible to chills, so that after getting hot we should try to reach the normal temperature gradually and uniformly, hence we should avoid draughts. Now, experience proves that these remarks are to a large extent as applicable to plants as animals, so that we do not think of taking plants directly from hothouses to the open air, but we prepare them for the change by "hardening them."

The fact that many plants can be grown so well without ever opening the ventilators proves that high temperature does not injure them, and the young gardener should bear this in mind when he has neglected to open the ventilators, and the temperature has run up 20° or 30° too high; he should remember that the evils which follow will very much depend upon how he manages the ventilators, and nothing should induce him to let in a large volume of cold air, not even the certain knowledge that his negligence will be discovered. Far more care is needed in ventilating when the temperature has been allowed to rise too high than when ventilated at the proper time, because the air that would be comparatively warm, or just cold enough to be invigorating in the latter case, would be chilly and often productive of baneful results in the former. The aim should be, under such circumstances, to reach the normal temperature as imperceptibly as possible by opening the ventilators gradually. Not more than a quarter of an inch should be allowed at first, and this should only be at the top of the house, unless the bottom ventilators allow the air to circulate round the hot-water pipes before coming in contact with the plants. Even then the top and bottom ventilators should not be open at the same time until after the proper temperature be reached, for that would create a draught, which is always injurious, more especially to over-heated plants; indeed, according to our experience the bottom ventilators are better kept closed, except in houses where plants have finished their growth, or on very warm still days. They are certainly better closed in the early part of the year if we wish to be free of red spider.

But the rational use of ventilators is not to reduce but to prevent the rise of temperature beyond a certain point, so that on favourable days a little air should be admitted as soon as the temperature begins rising, and it should be gradually increased as required. Sudden checks must be avoided in fruit and plant culture, for nothing is more productive of insect pest and disease. We want if possible to supply our houses with fresh air without creating a draught, and without unduly lowering the temperature, but this can only be effected with the ordinary arrangements by the exercise of care and forethought. It may seem superfluous to say that more air will pass through an inch space when the wind is rough than would pass through a foot when it was still; but, self-evident as it is, we have often to reiterate it to our young assistants. The direction of the wind should always be noted, especially when it is rough, and if possible ventilate from the opposite side.

There are days, however, and we have had many of them this spring, when it is better to allow the temperature to rise considerably than to open the ventilators. There is nothing more trying for forcing than hot sunshine with a high scathing wind, or alternate hot sunshine and sudden cold storms, and that especially after a period of dull weather. On such days we prefer keeping the fires low and the ventilators nearly closed, with plenty of moisture, and for tender plants shade. This we find much better than opening the ventilators during such trying weather, which require very great care and constant attention, or, to say the least, an attack of red spider would be the result. Low span-roof houses are best ventilated through iron grates fixed into the wall a little above the ground line, and just under the hot-water pipes, and if more air be wanted open the doors at one or both ends as required. Plants very much object to a stream of air flowing directly on them; it often has the effect of drying and stunting them, and this cannot be avoided if top ventilators be used in low houses, hence the advantage of grates and opening the doors. Top ventilators, however, should always be provided, as they are useful during hot still weather.—J. H. W.

A CHAPTER ON CELERY.

"OUR Celery was not good last year" is an expression I have heard from scores of growers, but I am inclined to think this was more the fault of the grower than the Celery. Others say, "Celery requires a lot of attention to bring it to perfection." Here, again, I do not agree with them. It certainly needs attention, but very little sound cultivation is all that is required to bring Celery to the greatest perfection, it is often over-cultivated and sometimes neglected. Many understand that Celery requires a rich soil to produce fine heads, but this is no reason why it should be grown in little else than manure. I can remember the time when a layer of it was placed in the bottom of each trench to the depth of 9 inches or 1 foot, a little soil was thrown in, the plants placed in this, and they grew freely and looked well until we began to use them, when a sound stick was the exception and soft pithy growth the rule. Now not one-quarter of the manure is applied, that used is thoroughly mixed with the soil, and a "pithy" head is rare. This was giving it a "lot of attention" in the way of manure, but three parts of it was worse than superfluous. It looks well to have plenty of early Celery, and when fully grown by September some might think they were lucky, but on the contrary, as Celery is seldom used in any quantity until November and throughout the winter, and it is then it ought to be ready; but when matured before the summer is over and long before it is required much of it will be past its best, if not useless, whereas if only one or two rows were grown for the earliest supply, a few more for late autumn and a large quantity for winter and spring, the produce would always

be used when at its best. Good ordinary Celery may be grown in quantities in one trench. Four, six, or eight rows may be planted; but if first-class produce is desired not more than two rows should be grown in each trench, as this admits of its being earthed up so much better than when crowded. We grow most of ours in single trenches. The trenches are 1 foot wide, and a space of 18 inches is allowed from trench to trench. This is not such a waste of ground after all, as there is only 2 feet from row to row, and surely if good Celery can be raised as close as rows of Potatoes can be planted it is an advantage. In the case of winter Celery we have also found the single rows the best, as it is much more easy to protect single rows than wide beds.

We have not lost ten plants during the last half dozen years through the plants "bolting" prematurely. This I attribute to the care taken in watering them from the time they are visible until established in the trenches. Nothing is more injurious to young Celery plants than allowing them to become too dry at the roots. One overdrying is sufficient to cause half of them to bolt. If the weather is dry watering does not cease at the time they are planted, but if necessary they are watered until first earthed up, then they are safe. We do not water them every day, but the whole trench is well soaked once a week. This is ample to keep them in good condition.

Celery should be grown in firm soil, as this retains the moisture and causes the plants to grow robustly, which is always desirable. As soon as the plants are in, the soil is firmly trodden round them, and this is repeated if necessary before the first earthing up. Our earliest plants, which are now in the trenches, were raised from seed sown in a good heat, the seedlings being pricked out into boxes and hardened gradually. A sudden change of temperature is apt to cause some of them to go wrong, but if hardened like bedding plants no evil results follow. Of all the manures I have ever tried for Celery growing none equals that from an earth closet.

Every plant should be transplanted with a good ball of soil to the roots. When the soil is all shaken off them and only the bare roots remain, it takes them a time to recover, but if the soil is well retained about the roots they may be planted without the slightest check. Three or four years ago we thought to have some beautiful and clean Celery for exhibition. We sifted some very fine ashes and earthed up with these. The weather was very hot at the time, the ashes became quite warm, and the plan was a failure. A light soil quite free from worms is the best for earthing-up with. If grubs are present they will make rims on the stems and disfigure them, but by using a sprinkling of soot in the soil they may be avoided. We have wrapped a piece of stout grey paper round each stem before earthing-up slightly, in imitation of the "paper collars" for Celery once popular, and this is the best of all ways of keeping the sticks clean and preventing the soil getting amongst the leaves. The paper is left on, but as it is moistened and the plant expands it bursts and does not act as any impediment.

Frequent earthing is preferable to one or two large additions. If once the soil falls into the centre of the plant there is an end of a first-rate stick of Celery. No fuss need be made in rearing the latest Celery plants. They do not require artificial heat. When a frame is cleared of bedding plants, early Potatoes, sow the Celery seed afterwards. If there is no soil in the frame place a quantity there, but if any remains from the Potatoes level this down and sow the seed. If the seed is sown thinly, so that the young plants will have a little space to develope, they may be kept in the seed bed until planting time. Those who have no frames and who would still like to possess some Celery in winter may sow the seed in the open on and after this date. If in a warm situation the seed will soon germinate, and the plants will gain a good size for placing out in July, which is a good time to plant winter Celery.—A. Kitchen Gardener.

GARDEN SPORTS.

When the flowers of a plant raised from seed differ from the parent in form or colour it is customary to call it a "seedling," but when a bud or branch or a plant differs in like manner it is called a "sport." Of course the plant raised from seed is a seedling, and so are all others raised from seed, whether varying in character or exact copies of the parent. Would it not, therefore, be better to speak of those seedlings which differ from the parent as "seed sports," and those which arise from bud or branch variations as "branch sports?" The variation, whether from seed or bud, except in cases of fertilisation of flowers, artificial or otherwise, is presumably due to the same causes, but if this is not so I shall be glad if someone more learned than myself in these matters will point out the difference. We all know that the seeds of certain varieties of plants produce exact copies of the parent from which the seed is gathered, and others vary in a greater or less degree; we also know that "branch sports" are much less frequent than "seed sports," and we cannot influence them, so far as I know, as we can in the case of "seed sports" by artificial fertilisation. There our knowledge seems to end. But I strongly suspect that in both cases any cause that tends to produce an abnormal condition of a plant favours the production alike of "seed sports" and "branch sports." I have come to this conclusion from a long course of observation and experiment, and will give a case of each in illustration of this view.

First of "seed sports." If we sow the seeds of a variety that has had no special cultivation, the offspring will probably vary but little from the parent, or not take the development in size, form, or colour that it would from a plant highly cultivated. This is recognised by our writers on gardening when they recommend those who are working for the improvement of races to gather the seeds from the most advanced varieties only, and, while endorsing this view, I would add, gather only from such as have been highly cultivated. In the first extensive sowing of Rose seeds which I made the seeds were gathered from varieties subjected to ordinary cultivation, and the result was but little variation or advancement. In successive sowings the seeds were gathered year by year from plants subjected to higher cultivation, and the variation and advancement continued to increase. This, be it remarked, was independent of artificial fertilisation; the seed sports seemed to be more marked as the result of high cultivation in the parent.

A curious case of sporting from seed came under my notice some years ago. In a border were grown side by side seedlings of Petunias and Malope grandiflora. One year a seedling Petunia produced flowers very similar to the Malope in form and marking, the leaves being those of the Petunia. So evidently was this the case that many practical gardeners casually remarked it must be a hybrid between the two. I submitted the flowers to the late Dr. Lindley, who rejected this explanation, but offered no other in its place. The spot had been occupied two or three years successively by Petunias and Malopes treated as annuals. This individual died after flowering without producing any seed, although every effort was made to preserve it. Some of your correspondents will, I hope, have something more to say on this matter.

Then as to "branch sports." Camellias and Chrysanthemums have hitherto given us the greatest number of "branch sports," but they are becoming more frequent amongst Roses. During twenty-six years, from 1850 to 1876, I met with but one "branch sport" among my Roses, and that was a branch of Mrs. Bosanquet, which produced red flowers. Now see how many "branch sports" have been produced over the last ten years, and others are continually coming into notice from different cultivators. It may be said this is due or partly due to the breaking of fresh ground by hybridising the so-called species. Well, admitting this to be a factor in the case, there still remains, it seems to me, a large residuum most reasonably accounted for by the highly nitrogenised manures on which Roses have been fed over the last few years principally with the view of getting large flowers for our flower shows. A case in point is the double scarlet Thorn. This was a "branch sport" from the double pink Thorn, and originated in a garden adjoining a garden to which I was a frequent visitor. The "sport" was a strong central branch of a young tree, forced, I have no doubt, into greater vigour and higher colour by the excessive richness of the sap, for the border in which it grew was loaded year by year with the richest manure. There is one fact worthy of notice as a point of difference between "seed sports" and "branch sports." The former seldom re-assume the likeness of the parent, the latter often do so; hence, unless "fixed" by cultivation their commercial value is somewhat less.—William Paul, *Paul's Nurseries, Waltham Cross, Herts.*

FLOWER FARMING.

A few notes on the flower production at Mr. J. Walker's Ham Farm were given last week, and the present chapter must be devoted to the Whitton Farm, which has for a much longer period constituted the head-quarters of the Daffodil and hardy flower market trade in that part of Middlesex. It is a district of market gardens, fruit, flowers, and vegetables being extensively grown round Twickenham and Whitton, and when the fruit trees are bursting into flower is a most agreeable time for spending a few hours there.

THE WHITTON FARM.

Daffodils.—The flowers gathered at Ham are transmitted to Whitton, where in spacious sheds numbers of women and girls are busily engaged in making up bunches and packing for market. The flowers are all carefully assorted and tied in neat bunches of a dozen each, so arranged that the flowers for convenience of packing all turn in one direction. Packing is delayed as late as possible, and the flowers are closely placed in shallow wooden boxes, no

packing material being employed ; a piece of paper only is laid over the bottom and sides of the box, and the flowers are covered in a similar manner after the boxes are filled. The flowers are stood in pots of water until wanted. If it is desired to hasten their expansion they are placed on shelves in a lean-to greenhouse ; and if, on the other hand, it is necessary to retard their development they are placed in a cool dark shed, where they remain perfectly fresh for some time if they were not too advanced when gathered. Cutting the flowers at the right time is an important point, and to accomplish this the beds have to be frequently examined, the boys chiefly employed in this work being soon trained to recognise the exact stage at which the flowers must be gathered.

Though there are only twenty-four acres at Whitton, the ground is so closely cropped that a surprising quantity of Daffodils and other flowers is obtained. The varieties at Ham have already been noted, but a much larger collection is grown at Whitton, representing the most distinct forms in all the sections, the special qualities and characters of which Mr. Walker points out with the exactness and enthusiasm of a connoisseur. Commencing with the large trumpet varieties some grand beds of N. bicolor Empress, Horsefieldi, and grandis are seen—a most valuable stock of these fine Daffodils. Another grand variety, Emperor, is similarly well grown, and it is found that this and Empress succeed much better in the heavier soil at Whitton than they do in the sandy soil at Ham, while the reverse is the case with Horsefieldi, which prefers a light soil, though it is not very particular in this respect. As a large light yellow variety in this section Emperor is far ahead, while as a dark yellow a similar place is accorded to maximus, a finely proportioned flower of rich colour. With a good stock of Horsefieldi, Empress, and grandis, a constant supply of flowers extending over a month is obtained, as they expand in the order named, though Empress is cut before Horsefieldi is exhausted. These are all represented by strong plants, which produce three and four large flowers to each bulb. Other beautiful varieties of the trumpet type that are reliable, distinct, and of good habit, are the following, named nearly in the order of their flowering. The Tenby Daffodil (N. obvallaris) and Troilus, which are very hardy and endure exposure to wind, sun, and rain admirably ; Ard-righ, Henry Irving, and Golden Spur are useful, the last named being a particular favourite. Captain Nelson and J. G. Baker are notable for their finely formed flowers. Dean Herbert, J. Walker, M. Foster, J. B. M. Camm, and Mrs. J. B. M. Camm are also amongst the best of the group.

To what are termed the hybrids, such as the Leedsi, Barri, Backhousei, Nelsoni, and Burbidgei varieties, numerous beds are devoted, and some exquisitely beautiful forms are included of the most delicate tints. To enumerate all that possess distinctive merits would make a large catalogue, but a few were noted as the best amongst the best. Nelsoni aurantius has a fine expanded crown, orange with a reddish tint ; William Wilks, one of the Backhousei type, has a white perianth and large gold crown ; Leedsi amabilis is very free, five to six flowers to a bulb, the perianth white, with a long creamy tinted crown ; Leedsi Beatrice has a white perianth and short creamy crown which gradually becomes white ; Leedsi Minnie Hume, a charming variety, delicate yellow crown and white perianth ; Leedsi Mrs. Langtry, white perianth and creamy yellow crown ; Leedsi Duchess of Westminster, very handsome, white perianth and pale yellow crown, and a large well-formed flower. Barri conspicuus and the graceful Burbidgei forms are all worth attention.

White Daffodils are in demand, and a large stock is grown, precedence being given to cernuus, but cernuus pulcher, Niobe, Colleen Bawn, Leda, Mrs. F. W. Burbidge, Mrs. Thompson, and Dr. Hogg are handsome, though some of these are a little delicate. In the interesting paper recently read before the Horticultural Club by Mr. Walker, he remarked that, "Of the hybrids the two I find the most difficult to grow and multiply are Dr. Hogg and J. G. Baker. I do not know who is responsible for naming these two weak varieties after two gentlemen possessing so much—what shall I call it?—fibre, grit, or will ; but I have a strong opinion that there should be some trace of the quality of the individual in the flower. As an instance of this incompatability, Mr. Barr, in his book of 1885, has a single incomparabilis that he calls Wellington ; now imagine an incomparabilis with a flimsy perianth and called Wellington."

The N. incomparabilis varieties are most numerous, and even the greatest enthusiasts in Daffodil culture admit that there are too many. A few only are grown extensively, and the best of these were noted at the Ham Farm. Of N. poeticus, ornatus, recurvus, grandiflorus, and poetarum are chief varieties.

In the paper just noted Mr. Walker referred to an interesting subject, the reversing or change of characters in varieties when removed to different soil. In regard to N. pallidus præcox he says :—"It will be found that there are not two flowers alike ; it seems as if each one was a seedling, whereas the flowers of our Tenby variety are all so much alike that it would lead one to suppose they had all originated from one bulb. It may be worth our while to inquire if we obtain any of our varieties from reversions. I for one believe that we do ; some persons are of the contrary opinion. It may be very difficult to get direct and trustworthy evidence on this point, although strong circumstantial evidence can be produced. I believe a change rarely takes place in the progeny of bulbs of one's own growing, but rather from bulbs received from outside sources that have been grown for a long time in soil altogether different in its nature from one's own. It would seem that it is when the bulb receives a violent change the old blood is set a-going. Mr. Dixon's opinion about Sir Watkin is that the bulbs he received in 1884 had been grown in the same place for quite eight or ten years. Those I obtained were planted in soil that had been broken up about two years previously, and had been meadow land for a long course of time. When they had flowered in 1885 we had one flower with an orange cup, which we call Lady Wynn. The same may be said of Mrs. Thompson, which I contend is a sport from cernuus pulcher. I have no doubt that the bulbs grew in the Aldborough Rectory garden from the time Leeds' collection was divided until the time of Mr. Nelson's death. It would appear that the greater length of time the bulbs are grown in one place, before being removed and planted in soil of a different nature, the greater the change that is likely to take place."

Miscellaneous Hardy Flowers.—Though Daffodils are such a great specialty at these farms, they by no means have exclusive possession and attention. For instance, herbaceous Pæonies are cultivated in large quantities for cutting, and a selection of 100 named varieties, carefully reduced from all those obtainable, fill a series of large beds, and yield numbers of their showy flowers during the summer. Pyrethrums are similarly extensively represented, while Irises, German, Spanish, and English, are grown by thousands. Yellow Crown Imperials are flowering now, and the Turban Ranunculuses, which are grown in four colours, yellow, orange, scarlet, and white, are evidently thoroughly at home in long beds, where they remain throughout the winter protected only by a layer of litter on the surface. Tulipas of the Gesneriana and retroflexa types occupy much space, while of Liliums there is a grand stock both of L. candidum and L. testaceum ; long rows of these two species under the fruit trees will yield a bountiful supply of their pure white and buff coloured flowers. The useful white Gladiolus Colvilli The Bride is another feature, and seems to be in the most vigorous health, while at the present time Doronicum caucasicum is yielding a profusion of its fine yellow flowers, the much taller and stronger Doronicum Harpur Crewe, which grows at Whitton to the height of 4 or 5 feet, being also expanding its flowers. Poppies and numerous other flowers are included to extend the supply and increase the diversity, but the principal features have been noted.

Fruit.—The greater portion of the Whitton Farm is really an orchard of Apples, Pears, and Plums, with Gooseberries between the rows, and so closely cropped is the ground that enormous supplies must be obtained. The Gooseberries are vigorous fruitful bushes that are subjected to no systematic pruning beyond thinning the growths where too thick, or removing old exhausted shoots. Some thousands of bushes of Lancashire Lad are grown, and this variety is especially esteemed for market gardens where land is heavily rented, as owing to the erect compact growth of the bushes they can be planted closely together, and they do not encroach very much on the space between the rows ; moreover, the variety is very prolific. A few rows of Crown Bob are also grown, but in some districts this is almost exclusively relied upon. Between the lines of Gooseberries are rows of Lilies and Doronicums or Wallflowers, and in the more open spaces are Lilies of the Valley in large quantities, the Victoria and Wallis's varieties being the favourites. The former is much earlier, and is well advanced now, a considerable difference being noticeable in this respect between the two varieties, though they are equally fine in the size of spikes and flowers. Several houses, pits, and frames are devoted to Strawberries, 5000 plants of Sir Charles Napier being grown. These are now flowering or setting their fruits, and are promising a most abundant crop, which will come in at a time when such fruits bring a most remunerative price—namely, after the main stock of early forced Strawberries is exhausted, and will come in advance of the outdoor crops.

It will be gathered from the remarks in this and the previous article that Mr. Walker has developed an extensive business of a somewhat novel character, but this has only been accomplished by the most untiring energy, well directed enterprise, and *hard work*. From three o'clock in the morning until ten o'clock at night makes a long day, yet that is the routine at this time of year and until the season for lifting the bulbs arrives. That, again, is a busy and important period, then follows planting, and after that a little leisure. To carry on a business of this kind in face of the com-

petition of the present day requires a well constitutioned body and mind, unflagging industry, and something more than money interest in the work. Success comes to a few without an effort, or as the product of others' labour, but the most substantial commercial prosperity is seen in such establishments as Mr. Walker's, the result of independent intelligent perseverance.—L. CASTLE.



SUCCESSFUL ROSE GROWING.

OUR Journal is always interesting, last week more so than usual, because it contains a record of the above—that is to say, an attempt to grow Tea Roses, ending, after a slight struggle, in a resolution to discard most of them, and to grow Maréchal Niel only, and that on standard Briars. Well, this is success with a vengeance, not the sort of success I should care about; in my opinion it looks too much like failure.

Here we have several competent growers putting their heads together to examine the soil, which, by-the-by, is just about twice too deep. The Roses were on the Manetti stock, and, "strange to say," they refused to do any good. It would have been much more strange if they had grown and done well. The idea of anybody attempting to plant out Tea Roses on the Manetti stock and expecting them to do anything but fail, is amusing. The idea of competent men not knowing that the stock was in fault is equally so. We are told that Maréchal Niels are now growing and blooming well. These will continue in flower for a few weeks, and then—there will be about eleven months to wait for more blooms. No, I should not care for this, there is too much waiting and too little result. I want to see a few other Roses. I want blooms about six months out of the twelve. I want Niphetos, and Catherine Mermet, Etoile de Lyon, Sunset, The Bride, and ever so many others. I do not wish to disparage Maréchal Niel; but wait, "I say, look here, what's this big lump, this swelling? and see, there's one here too. Why, hang it, there's one on all of them." Enter the competent man—"Ah! that's canker, no cure, they will all have to come out." Out they come, and then—what next?—D. GILMOUR, JUN.

ROSES IN WINTER.

To meet the wishes of some correspondents it will be necessary to add to the details already given to render any structure which may be erected or devoted to the purpose suitable to meet the more lengthened supply of blooms that may be desired. When the supply is lengthened into March and April a greater number of varieties may with advantage be grown, and the useful and beautiful Hybrid Perpetuals cannot be excluded from the list at that period. The structure must be so arranged that they can be accommodated during the flowering period, or even while they approach that stage. A house entirely laid out with beds on the side as well as the centre is not altogether suitable for the purpose. It would be better to have the house in two or even three divisions. Small houses may be objected to, but they are decidedly the most suitable for supplying flowers in succession during the winter and spring months, for then each portion can be treated according to the varieties in it and the purpose for which they are intended. When numbers of varieties are planted in one good sized house the whole of the plants are excited into growth when many of them would be better resting, the few flowers they would yield during the early months of the year would not give satisfaction. When the season has fairly advanced they will not flower so freely or grow so strongly as they otherwise would have done had they not been started into growth too early.

The first portion of the house can be planted, as recently detailed, with Safrano and Isabella Sprunt for flowering during December and January, with the old Gloire de Dijon trained under the rafters of the roof. No variety for the roof is better for that period, for whenever it is started into growth it is certain to flower. If the house is in any way lofty, say 8 or 9 feet from the floor to the ridge, an arched trellis should be formed over the central bed to which the Roses can be trained so as to bring them nearer the glass. If the house was constructed specially for the production of blooms for market it would be much lower, and no such trellis would be erected, the bush system would be adopted, and strong shoots trained as horizontally as possible to induce them to break strongly from the base when the necessary pruning was done.

The second portion of the structure if growing for market would be entirely planted with Niphetos on the same principle as the first division, with Lamarque, Reine Marie Henriette, and William Allen Richardson under the rafters if I wanted variety; if not I should train Niphetos up that position, or plant it alternately with Perle de Lyon. If either of these was employed the others would be planted at the walk edge of the side beds, and cut away as the slower growing two occupied the space. These would be started to commence flowering at the end of February, and with good treatment would continue yielding flowers until they were plentiful outside. The earlier division would also do this. If this division was arranged for the supply of a private establishment the side beds would be narrow, wide enough only to support those trained under the rafters. A stage to the front of slates resting on the second wall from the outside, and the front on angle irons supported with iron legs let into a stone to prevent their sinking. The stage should be covered with some moisture-holding material. On this Hybrid Perpetuals would be grown. To those named for the roof would be added Belle Lyonnaise and Cheshunt Hybrid. The centre bed only would be filled with Tea varieties, and these would include in addition to Niphetos, which would occupy about one-third of the space, Rubens, Madame Lambard, Innocente Pirola, Perle de Lyon, President, Souvenir d'un Ami, Madame Falcot, Souvenir de Madame Pernet, Madame Angèle Jacquier, and Marie Van Houtte. I am not sure whether Sunset will not supersede Madame Falcot. The Bride might also be tried in this division; it promises well, but it is yet too early for me to form a just estimate of its constitution.

If arranging a house for market purposes I should have no third division unless there were no other place for Maréchal Niel. If possible devote the whole roof of a house to this Rose; otherwise have a third division for this variety trained under the rafters only, with as much growth as allowed in that position between the rafter. This would permit a large amount of light to penetrate to those below. Now what would occupy the central portion of this division would depend upon the size of the other houses and the supply the second division would yield of Niphetos. If plenty of that, then this division would be exclusively devoted to the production of that old inhabitant of our gardens, Général Jacqueminot, which is without question the best and most satisfactory red Rose for the market that can be grown. For that purpose this variety is worth a house to itself, which if grown in pots would leave the house after it was turned out to be utilised for other purposes. If the alternative object was in view the variety named would cover the roof, side stages would be erected for Hybrid Perpetuals, and the centre again filled with Tea Roses. This time a more comprehensive assortment would be selected—Grace Darling, Etendard de Jeanne d'Arc, Alba Rosea, Catherine Mermet, a good Rose but rather shy, Comtesse Riza du Parc, Duchess of Edinburgh, Jean Ducher, Madame Cusin, Madame Denis, Madame Hippolyte Jamain, Madame Willermoz, Princess of Wales, Souvenir d'Elise, and Souvenir de Madame Paul. The two first are practically new Roses, and both are valuable additions to the list of Teas. Both are strong growers with full blooms, the first being a pleasing pink and the latter white. Grace Darling flowers very freely and opens its flowers well during the months of October and November; the other produces buds freely at that period of the year, much after the style of the old and useful Souvenir de la Malmaison, but they are too full to open freely during the autumn months. It has a tendency to come green at that time of the year, but would probably improve in this respect if subjected to heat.

The following Hybrid Perpetuals may be grown for early forcing or for flowering during March and April, and all that are named may be relied upon as varieties that I have proved will do well in pots—Général Jacqueminot, Louis Van Houtte, La France, Prince Camille de Rohan, Jules Margottin, Marie Baumann, Charles Lefebvre, Abel Grand, Magna Charta, John Hopper, Alfred Colomb, and the old Bourbon Souvenir de la Malmaison. In preference to growing the whole dozen I would rather grow the first six and the last; if a pink other than La France is needed, Abel Grand would be included. Magna Charta is one of the earliest and freest flowering H.P.s that can be grown in pots, but it is scentless, and this is the reason it is not accorded a higher position in the list. Most of the H.P.s will do well in pots if brought forward under cool conditions to precede those grown outside, but some do better than others, and the following are reliable:—Baronne de Rothschild, Merveille de Lyon, Duke of Teck, Madame George Paul, Bessie Johnson, Camille Bernardin, Victor Verdier, La Duchesse de Morney, Docteur Andry, Fisher Holmes, Senateur Vaisse, and Coquette des Blanches. These are only given for the sake of variety, those named first are preferable.

The amount of piping needed for forcing Roses during the winter months depends upon the size of the structure. Frequently a flow and return 4-inch pipe will be ample, or it might have to be doubled. Sufficient should be arranged in each house so that an intermediate temperature can be maintained to keep the structure 55° during severe weather without being compelled to have the pipes hot. Dry heat from pipes is decidedly objectionable for Roses.—WM. BARDNEY.

(To be continued.)

FACTS ABOUT GRAPES.

FROZEN VINES.

No amount of frost appears to injure the exposed stems when the Vines are in a dormant state, but should they become frozen when the sap is liquified much harm may result. In this district last spring we experienced a series of exceptionally severe frosts, the thermometer falling on the night of March 16th to within 3° of zero. As may readily be imagined such a severe frost so late in the season proved most injurious, but under glass all we found injured was a rod of Madresfield Court Grape. This was in full leaf, and the bunches on the point of flowering. Directly the sunshine reached it the bunches and leaves all drooped badly, yet, strange to relate, a second rod from the same stem was not affected in the least by the frost. The roots of this Vine are entirely in an outside border, this being well up to the woodwork of the front of the

house, so that only a very short stem is exposed. Even this was supposed to be sufficiently covered with strawy litter, but events rather disagreeably proved we were mistaken in this respect. Both rods started from near the roots, but the oldest, or that injured, overlapped the other and thus protected it. It was not the roots, these being well covered, that were frosted, but the very short portion of exposed stem must have been frozen through, this causing the crude watery sap to swell and thereby rupture the sap vessels. It was thawed as quickly as possible, but for weeks the foliage had to be shaded, and even then flagged badly in bright sunshine. This convinces me that the injury was rather of a permanent character. True, we managed to save a few bunches, but these were not half so valuable as those on the uninjured rod, and the wood was also much smaller. This season it is breaking strongly, but it yet remains to be seen that it is quite recovered from the severe check received. I have seen Roses with their tops under glass and stems outside crippled by frosts, but these sooner recover than did our Vine. In the course of a conversation on this topic with an experienced friend in charge of a large garden in Kent, he mentioned having once found the whole of his Vines in an early house flagging badly after or during the prevalence of a severe frost. They were rooting in an outside border, and it was this, not the stems, that was badly frozen. Luckily so for him I should say, or the thorough watering of the border with hot water would not have restored the Vines and saved the crop.

If there are any persons who do not take the trouble to thoroughly protect the exposed stems and roots of Grape Vines, or indeed of any greenhouse climber or Rose, these instances ought to convince them they run great risks in not attending closely to this matter. The stems of both early and late Vines ought to be well enclosed with haybands, felt, or old sacking. If this is done neatly there is no necessity to remove them after all danger from frosts is past, as it is doubtful if the stems are not also better for being sheltered from cold winds and bright sunshine. I am not an advocate of the practice of smothering the border throughout the year, keeping it in a sour inert state. Unless prior to active growth commencing it is annually lightly forked over or loosened to the depth roots are plentiful, and renewed with a surfacing of fresh turfy loam and bone meal, or better still, either Thomson's Vine manure or Jensen's fish-bone manure, a frost would then do good, benefiting it much the same as it improves ordinary garden soil. No risks, however, should be run in the case of Vines forced or started before March, and these ought to be early covered by a good depth of dry leaves faced over with strawy litter.

HOTBEDS ON VINE BORDERS.

Are these of any real service to the forcer or not? I am disposed to think they are, and will give my reasons. The practice of forming a hotbed on an outside Vine border is old-fashioned doubtless, but I have never undertaken to prove all time-honoured customs are wrong, and have only fallen foul of a few of them. Probably the now very general practice of forming inside borders in the case of early Vines has something to do with the lapse of the practice under notice; but even in this case a gentle hotbed on the border is beneficial in starting the Vines strongly and in bringing roots to the surface. As it happens there are yet numerous instances where Vines rooting solely or principally in outside borders have to be forced so as to have the fruit ripe in May, June, or early in July. It is these that stand in need of being warmed at the roots, and unfortunately this is not very easily accomplished. A hotbed about 3 feet deep and formed with leaves and stable manure in about equal proportions will, in spite of the tendency of the heat to rise rather than descend, materially raise the temperature of the border. Then, instead of the crops being nearly matured before root-action actually commences, the warmth in the border will start the roots much earlier, to the great benefit of the Vines. Unless so assisted hard forced Vines rarely last long in good health, the falling off being first noticeable in the stems, these refusing to increase in size and usefulness. Hotbeds are also of great service in attracting roots to the surface, where I suppose we all like to find them, and in our case we can tell to a foot where they are formed. Not only are they of great assistance to the old Vines, but those newly planted, also stand in need of them. Supposing dormant canes are planted, these, whether inside or out, start and grow rapidly for a time, quite delighting those in charge. Then comes a sudden stoppage, and no more real progress is made till the roots are active. If the latter are lively by the time the stored up food is exhausted no check to top growth is experienced, and grand rods result the same season, hence the advisability of giving them the benefit of a gentle hotbed. Let me repeat "gentle hotbed," for in my younger days I saw a house of Vines ruined owing to the roots being killed by a hotbed the reverse of gentle. The Vines at the time were in flower and all suddenly hung their heads, never to again properly recover. I was the first to discover the collapse, and the head gardener responsible found the cause. The hotbed had been formed with nearly all stable manure, and which had not been properly prepared. A change from cold to warmer weather caused the heat to suddenly rise, with the result already mentioned. If a hotbed is formed on a Vine border it ought first to be prepared as if intended for a Cucumber bed; stakes should be kept plunged in it and frequently examined. If these are found to be unbearably hot to the hand the centre of the bed ought at once to be opened out and the excess heat allowed to escape. Later on the bed may be restored to its former state and the heat further husbanded by having mats or more dry litter spread over the surface.—W. IGGULDEN.

GLADIOLI NOTES.

REFERRING to Gladioli notes by your correspondent "B.," May 3rd, p. 364, I have from time to time during the last fifty years taken in hand the cultivation and propagation of nearly every kind of bulbous plant grown in this country, more particularly the Gladiolus. We devote here annually upwards of twenty acres to its culture. Surely this is proof, if proof is wanting, that it must be a simple process. No bulbous plants that I know of, except the Narcissus and Snowdrop, which are weeds in the woods and fields in this county, are of easier culture. Our nursery grounds here are composed of clay on limestone, heavy loam on gravel, red sandy loam and black bog. On all these soils under good tillage they do equally well. We prepare the land by ordinary manure and deep ploughing in December and January. In February and March, or as soon as the land is sufficiently dry, we harrow it to get it into a good tilth. Early in March it is drilled with a horse drill 18 inches apart and about 4 inches deep. The roots are then planted in the ordinary way of planting Potatoes and covered with the hoe. The spawn is put in in a similar way by hand, the drills being only about 1 inch deep. The same process is carried out in raising corms from seed.

A great deal has been written about the well-ripening of the corms, disease, degeneration, and exhaustion. The first three complaints are not worth commenting upon; the last is easily understood by every successful horticulturist. If we want to rear a plant or a bulb to perfection, we must deprive it of the means of reproducing itself until it is fully matured. We should get few fully developed Dutch bulbs if the flowers were not plucked. The most congenial seasons for the Gladiolus are those accompanied with high temperature and moderate moisture; low temperature and excessive moisture are unfavourable. After all, without care and skilful knowledge failures are certain.

A word as to late varieties. Duchess of Edinburgh (Kelway) is undoubtedly the finest of all the hybrids. It increases freely and developes splendid corms. This, as well as Phœbus, Leviathan, Ala, Marsianus, and Sassia ripens well here, and are in perfection in the first week of September. If possible, we manage to get up all our corms before the foliage dies down. It would be a rare thing to see a corm perish from early lifting provided they are properly dried off. On the contrary, when they are left in the ground to die down, and are taken up in wet weather and stored in an unhealthy state unfavourable results follow.

One word more. Will your correspondent "B." kindly tell us where and when Messrs. Stuart and Mein were so successful, as stated in his article?—JAMES KELWAY, *Langport, Somerset.*

AURICULAS.

MY friend, Mr. Horner, would have made a capital lawyer, for he can get up a case for a client in first-rate style, and I must not attempt a defence *in extenso*. Unfortunately I am not convinced by all he says on the subject of self flowers. I know that the outside public esteem them very highly, and probably the rougher and coarser they are the more would they admire them, just as I remember a lady going to see my brother's collection and especially admiring those beautiful ones with all the "pretty fluffy stuff amongst them," this being some cotton wool he had placed amongst some of his flowers which were going to be exhibited. These are not the kind of people whose judgment on the Auricula is to be taken into account. I acknowledge the beauty of the self, but I still maintain that they are behind the edged flowers.

I am very sorry not to have sufficiently admired my friend's babies, as I know there is no point on which people are so tetchy as about their own bantlings. I fear I have been guilty of as great a mistake as if I had told a friend that his child had red hair. Red! oh, dear no; auburn! It may have been the light, or rather the absence of it, which led me to see two shades in Laura, dear child! But it apparently struck the reporter of one of the gardening papers in the same way. As to Ebony, what can I do to make my peace? Honestly I did not notice it. I am sorry, for evidently my friend is not of the opinion of a coloured woman who was once in our workhouse here, and who, when a white

baby was born to her, was so glad that it was not black, for my friend seems greatly to rejoice in his nigger baby, and when I have the pleasure of seeing it again I hope it will be sufficiently advanced to receive my apologies.

As to the question of heat, Mr. Horner has detailed his practice, but are other growers so careful? I still believe that a good deal of the rank coarse growth and crumpled character of many of the blooms must be laid to the door of fire heat, it may be, injudiciously applied.—D., *Deal.*

CRYSTAL PALACE SHOW.

MAY 12TH.

THE summer Show at the Crystal Palace, Sydenham, on Saturday last, as usual attracted a large number of visitors, who found plenty to admire. Mr. W. G. Head has adopted a method of arrangement which must be better suited for a large show in such a building—namely, what may be termed the "extension system," in preference to the concentrated style of grouping the exhibits. When these are confined to a smaller area bolder general effects can be produced, but when a show is visited by some thousands of persons the disadvantages are very much against it. On the contrary, when the plants and flowers are arranged over a good portion of both naves with a series of groups round the centre transept, the exhibits can be much more readily inspected.

The season has been unfavourable to cultivators of specimen plants as well as in other departments, and the fine-foliage plants, particularly the Crotons, showed the effects in a deficiency of colour that marred their beauty considerably. Caladiums, however, as shown by Messrs. Laing & Son, Forest Hill, were an exception, as, though they were not quite at their best, the delicate markings of the foliage were well developed. Roses from Cheshunt, Slough, and Waltham Cross; Azaleas, Pelargoniums, Orchids, and stove and greenhouse specimen flowering plants constituted the chief features, together with large miscellaneous non-competing collections, very notable amongst which being the Daffodils and hardy flowers from Messrs. Barr & Son and T. S. Ware, with Mr. Bennett's and Mr. Rumsey's Roses.

The most successful exhibitor in the stove and greenhouse classes was Mr. W. Chapman, gardener to J. Spode, Esq., Rugeley, Staffs, who won the premier prizes both for nine and six specimens. His plants were large globular examples of Erica Cavendishiana, Ixora coccinea, Tremandra ericæfolia, Dracophyllum gracile, Erica profusa, Anthurium Schertzerianum, and others of the conventional exhibition character. Mr. H. James, Castle Nursery, Norwood, also competed in these and other classes, seventeen in all, but a large proportion of second and third prizes were awarded him, as his plants were not in their best condition. Azaleas were not fully out, but Mr. C. Turner's nine large and eighteen small plants which gained the first prizes in their respective classes were compact and well flowered specimens of the most effective varieties. From the same nursery came the leading show and fancy Pelargoniums, the chief amateur exhibitors of those plants being Mr. D. Phillips, gardener to R. W. Mann, Esq., Langley Broom, Slough, and Mr. F. Hill, gardener to H. Little, Esq., The Barons, East Twickenham.

The Roses in pots from Messrs. Paul & Son, Cheshunt, won first honours in the class for eighteen plants in 9-inch pots, healthy, well-flowered, handsome specimens of moderate size; Messrs. G. Jackman and Son, Woking Nursery, and Mr. C. Turner following. Mr. P. Perry, gardener to W. G. Rowlett, Esq., Woodlands, Cheshunt, was the only exhibitor of six Roses in the amateurs' class, and secured the chief prize for good plants. Calceolarias and Gloxinias do not demand special mention, as they were not in first-rate condition.

Orchids were contributed by Mr. James, who was first with nine plants and a specimen, and third with a group which seemed to have been arranged too hurriedly to do it justice; by Mr. H. Little, who had some excellent specimens in his second prize collection of nine; and by Mr. F. Cooper, gardener to Walter Cobb, Esq., Silverdale, Sydenham, who won the first prize for six plants.

Messrs. J. Laing & Son, Forest Hill, won premier honours for a bold group of miscellaneous plants arranged for effect, which had an imposing appearance at one corner of the transept. Palms, Draceenas, Crotons, and Caladiums constituted the background; choice Orchids, Tuberous Begonias, Imantophyllums and Azaleas furnishing abundance of colour. Messrs. Laing & Son were also first with nine Caladiums, which have already been referred to as characteristically fine specimens. Mr. A. Offer, Handcross Park Gardens, Crawley, competed in several of the classes for fine-foliage plants, showing large specimens, but not well coloured; and Mr. T. N. Penfold, gardener to the Rev. Canon Bridges, Beddington, contributed some excellent Ferns, which won him first prize in the class for nine. Mr. G. Parrott, gardener to W. Wright, Esq., Denmark Hill, being second to Mr. Offer in the amateurs' class for six Ferns.

In the bouquet and buttonhole classes Messrs. Perkins & Sons, Coventry, took the lead with their customary tasteful elegant contributions. Miss Hassell, Southfleet, Gravesend, was first with three vases of flowers, and Mr. Prewett, Hammersmith, gained a similar position with twenty-four bunches of cut flowers; Messrs. P. Perry, E. Chadwick, and A. Gibson gaining the prizes in that order for twelve bunches of flowers.

In the class for best brace of Model Cucumber, grown from seed supplied from Messrs. Carter & Co., 237 and 238, High Holborn, the first prize won by Mr. G. Collins, gardener to J. A. Rose, Esq., Wandsworth Common. Messrs. Sutton & Sons' prizes for the best six specimen Gloxinias, grown from seed or tuber supplied from Reading, were won by M. Jacoby, Esq., Lynwood, The Avenue, Gipsy Hill, and Mr. W. Monk, gardener to G. R. Higgins, Esq., Eastlands, Dulwich. For the best brace of Cucumbers, either Sutton's Improved Telegraph or Sutton's Purley Park Hero, Mr. W. Monk was first, and Mr. A. Gibson, gardener to T. F. Burnaby Atkins, Esq., Halstead Place, Sevenoaks, second.

Extra prizes were awarded to Messrs. Barr & Son, for a group of Daffodils; Mr. W. Rumsey, for eight boxes of cut Roses; Mr. Thomas Ware, collection of Narcissus and spring flowers; Messrs. H. Cannell and Sons, for Calceolarias and Mignonette; and Mr. H. Bennett, for four boxes of cut Roses. First-class certificates awarded to Messrs. Barr and Son for Narcissus, Madame de Graaff, Leedsi Mrs. Langtry, incomparabilis Sir Watkin, bicolor grandis, Leedsi Duchess of Westminster, Barri Dorothy Wemyss, Leedsi Beatrice, Incomparabilis Beauty, and bicolor J. B. M. Camm; to Messrs. J. Laing & Sons for Caladiums Charlemagne, Marquis F. de Albertas; to Mr. H. Bennett for Polyantha Little Dot; to Mr. J. Chambers for Viola, Snowflake; and to Mr. H. James for Anthurium Schertzerianum sanguineum.



EVENTS OF THE WEEK.—To-day (Thursday) the Royal Horticultural Society's Show in the Inner Temple Gardens will be open to the public at 1 P.M., and it will also be continued on the whole of Friday. Upon Friday the Whitsuntide Show at Manchester will be opened, and will continue until the following Friday. The Royal Horticultural Society's Committees will meet on Tuesday, the 22nd inst., at the Drill Hall, Westminster.

—— THE WEATHER IN THE NORTH.—The week ending 14th inst. has not been a very genial one. With much brilliant warm sunshine there has prevailed more or less throughout cold northerly winds, and several of the nights have been decidedly frosty. The effects can be seen on the shoots of Phloxes and the young growths of Roses, the latter making little progress. In the southern counties the weather has been bright with cold winds and several frosts at night. We hear that the recent keen winds have injured Peach trees on walls severely, and several gardeners complain that the prospect of a crop of Peaches is practically ruined.

—— HORTICULTURAL CLUB.—The usual monthly dinner and conversazione took place on Tuesday last at the "Hotel Windsor," Victoria Street, Westminster, where the future home of the Club will be, and was largely attended. Amongst those present were the Revs. E. Handly, W. Wilks, and F. H. Gall, Dr. Masters, Mr. John Lee (Chairman), Messrs. Cousens, Moss, H. Turner, Girdlestone, Walker, &c. The Secretary stated that Mr. T. F. Rivers, owing to illness, was unable to undertake the subject he had intended to have spoken upon, "Peaches," but that Dr. Masters had most kindly consented to take his place and speak on the subject of "Sports," which he did, and illustrated his remarks by some specimens of Conifers received that day from M. Naudin's garden at Antibes. An interesting discussion followed, and was joined in by the Rev. W. Wilks, Messrs. Cousens, Walker, Lee, and others, and a very pleasant and profitable evening was spent.

—— MR. THOMAS CROSSWELL, gardener to W. M. Bullivant, Esq., Homewood, Eden Park, Beckenham, writes:—"With my employer's permission I have sent you a sample of VICOMTESSE HERICART DE THURY STRAWBERRIES that we are now picking from. Our batch of plants of this variety was not potted into their fruiting pots (6-inch) till August 29th. Owing to the dry season we, like many more, were unable to obtain young plants earlier, and consequently the desired pots crammed full of roots were not in our case realised. In fact, at the end of the growing season, which for them was very short, I considered the prospect of a crop of fruit was very poor. Nevertheless, they are now carrying from ten to sixteen berries on a plant, and my employer has favoured me with the remark that "he thinks he has not seen a finer shelf of fruit." [The Strawberries are very good indeed, both as regards size, colour, and flavour. We have not had a better sample of the variety sent to us this season.]

—— A PROFITABLE NECTARINE TREE.—Early Nectarines if of good size and well coloured realise high prices in Covent Garden Market. Mr. T. King, gardener at Devizes Castle, has just cleared a tree of Lord Napier which perfected eleven dozen fruit. The whole of these were sent to Covent Garden, the earliest fetching 36s. per dozen, the next 30s.,

and none less than 24s. per dozen. At these rates they pay very well indeed, as very hard forcing, or the expenditure of much fire heat, is not absolutely necessary. The Peach houses at Devizes Castle are in a very sunny position, and the trees are in a most healthy state, being more thinly trained, and better ripened in consequence, than is usually the case.—I.

—— Nursery and Seed Trade.—We are pleased to learn that an amalgamation is to be effected on the 1st July next of the two great nursery and seed firms, Messrs. Francis and Arthur Dickson & Sons and Messrs. James Dickson & Sons, Chester, the two firms having for some thirty-five years separately carried on most extensive businesses in Chester. Previously for many years the firms were in one, and known as "Francis & James Dickson." We believe that at the present time, although there are throughout the country several businesses carried on under the title of "Dickson," those of the name residing at Chester are the only ones left of the original Edinburgh family, several firms using the name not having anyone actually bearing it connected with them. The amalgamation now referred to will, we are informed, secure for the joint business the continued fullest personal management of those who have for so many years been so closely and successfully connected with the two separate businesses. To this statement we may add that upwards of forty years ago, before the division of the nurseries between the two families of the first proprietors, an old local nurseryman of Chester remarked to us that his father told him that "the nursery trade was 'done,' Wales and the surrounding district was planted, and very little more would be wanted. But," added our informant significantly, "Look what these Dicksons have done." It was an instance of the power of trade enterprise over trade apathy that the steady old time workers could not anticipate, and if they could see the nurseries of "these Dicksons" now what would be their astonishment? We wish the firms, soon to be re-united, a continuance of the prosperity that has been won by high-minded conduct and sound business enterprise.

—— "M. C." writes, "In reply to your correspondent, Mr. Squelch, on page 382 *re* Early Cutting of Asparagus, I do not consider it exceptionally early to cut Asparagus from the open on the date mentioned by Mr. Squelch. I live not more than half a mile from Mr. Squelch, and cut from Asparagus from the beds on April 15th, and have been cutting regularly since that date. My beds are not at all protected."

—— "S." sends the two following notes:—"Fritillaria racemosa.—This is one of the most uniquely coloured flowers amongst hardy plants in bloom at the present time. Unlike the indigenous species, F. meleagris, the flowers are, as the specific name denotes, produced in racemes, three or more being borne on a stalk, and as these generally expand simultaneously they present a very elegant appearance. The Fritillary that it perhaps most resembles in point of colour is that of the Pyrenaian species, but the scentless blooms are more bell-shaped, and the bright tinted green markings in combination with the varying shades of chocolate impart a very singular appearance to what is certainly one of our most uncommon-looking flowers."

—— "Fritillaria meleagris.—Many of the meadows situated in the Thames valley are now embellished with blossoms of 'Snake's Heads,' as these flowers are popularly designated. In some places they are so abundant as to admit of being gathered in clothes-baskets full, and it is not an uncommon occurrence in the streets of Oxford and other places to see hawkers with them. If it were more generally known how easily these quaintly formed and prettily marked flowers are cultivated in pots more people would soon be familiar with them."

—— At the last meeting of the Wakefield Paxton Society, held at the "Saw Inn," Councillor Milnes, the President, was in the chair, and Mr. Arthur Goldthorpe officiated as Vice-Chairman. There was a moderate attendance, and Mr. John Smith, the President of the Leeds Paxton Society, read an interesting paper on "The Daphne," for which he received a hearty vote of thanks.

—— The *Kelso Mail* recently announced the death of Mr. William Thom of Newton-Don, a horticulturist who was well known in the north. "Mr. Thom was a native of Linlithgowshire, having been born in the village of Carriden on the 25th of June, 1808. He was early apprenticed as a gardener in the vicinity of his native place, and subsequently gained great experience in his profession in the counties of Linlithgow, Renfrew, Perth, and Mid-Lothian. It was while in the latter county, at Riccarton, that the famous Fuchsia Riccartoni was brought out under his care. He afterwards removed to East Lothian, where, at St. Germains, he was head gardener to the late amiable Mr. William Anderson. It was while here that Mr. Thom became a notable exhibitor at all the great horticultural shows in Edinburgh and a terror to competitors. The single Dahlia, now so fashionable, then gave place to the double, and in its culture Mr. Thom found a congenial pursuit; and his success in it may be judged from the fact that he more than once carried off first honours at Edinburgh against all comers. At Martinmas, 1847, Mr. Thom went to Newton-Don, and for many years he continued to take a deep practical interest in the affairs of the local horticultural society. At Newton-Don his intelligence and energies were afforded wider scope than the garden merely. As land steward he showed a sound practical knowledge of the science of forestry; and his numerous friends among the farmers of the district have long been aware of his shrewdness and sagacity in the management of land and farm crops."

—— Gardening Appointment.—We are informed that Mr. Wythes, gardener to Lady Hatherton, Teddesley Park, Staffordshire, has been appointed to succeed the late Mr. Woodbridge as gardener to the Duke of Northumberland, Syon House, Brentford.

—— A Spring Display.—A border 20 feet long and 2 feet wide of Triteleia uniflora is now in perfection at Elford Hall, Tamworth. The border is one dense mass of delicate pink and white blossoms, and anyone once seeing them in this way will never again be satisfied with them in pots or in small patches in the open border. The bulbs remain undisturbed year after year. Magnolia conspicua trained against the mansion is covered with hundreds of flower buds, and in a few days will be one mass of rosy pink cups. The flower garden is gay with Blood-red and Belvoir Yellow Wallflowers, Myosotis dissitiflora, Alpine Auriculas and Polyanthuses, and altogether has a very satisfactory appearance under Mr. J. Udale's charge.—B.

—— The Local Government Bill.—Mr. A. H. Smee, who is a member of the Council of the Royal Horticultural Society, a Fellow of the Chemical Society and of the Epidemiological Society, a Fellow of the Royal College of Surgeons, also Chairman of the Beddington, Carshalton, and Wallington Conservative Association, has, after a close examination of the above Bill, arrived at the conclusion that it will, if passed in its present form, be decidedly inimical to the interests of occupiers of cultivated land, such as market gardeners, farmers, and owners and tenants generally in rural districts. At a low computation it has been estimated that the working of the county and district councils will cost the country at least £5,000,000 per year extra. As at present arranged the Government will pay about £3,000,000 of that, leaving a deficiency of £2,000,000 to be paid out of the rates. The present rateable value may be taken as £160,000,000, and thus the £2,000,000 mean practically an increase of taxation of something like 2d. in the pound, presuming that the estimate should prove a fairly correct one. Mr. Smee, however, thinks it may be greatly exceeded, and is of opinion that the Council of the Royal Horticultural Society should by the appointment of a special committee or otherwise, watch the Bill in the interests of cultivators, and take steps to prevent, if possible, a further burden being imposed on them that many are unable to bear. Mr. Smee has further printed some letters in pamphlet form addressed to Lord Salisbury and Mr. Bonsor, M.P., containing what appears to be cogent arguments against the Bill on the appointment of sanitary authorities. He suggests that the Bill should be carefully studied by committees of provincial horticultural and agricultural societies, with the view to its being well understood and its possible effect made known before it is too late to effect modifications that he thinks are needed on the grounds indicated. As this Bill is essentially non-political, and will be discussed irrespective of party feeling, we think it right to direct the attention of our readers to Mr. Smee's suggestions.

—— In the course of an interesting description of Chester-le-Street, Durham, the *Newcastle Weekly Chronicle* gives the following note on profitable Vine culture. "The problem of profitable Vine culture in England has been solved by Mr. Joseph Witherspoon of Chester-le-Street. He has conclusively proved that by skilful management and untiring industry, Grapes, Nectarines, and Peaches can be raised in this country and sold at a price that gives a fair return for capital and labour. In view of this fact we have thought that a sketch of his vineries and a few details of his career may prove interesting to our readers. Joseph

Witherspoon was born at Hopgarth Gardens, Chester-le-Street, on the 2nd of February, 1831, consequently he is now in his 58th year. In 1845 he entered on a seven-years apprenticeship with Mr. Wm. Stoddart, cartwright. He became editor of the *Chester-le-Street Times* in 1870, which post he held for eleven years, and it was whilst so engaged that he bought the plot of ground now the site of his vineyard known as the Red Rose Vineries. In 1834 his parents removed from the Hopgarth to the Red Rose Hall Gardens, on the Red Rose Hall estate, where they resided for thirty-seven years. Collectively, the several vineries are 480 feet in length, average 19 feet in width, and for several years have produced 150 dozen Peaches and Nectarines, and 4000 bunches of Grapes. He has won many prizes for Grapes, including £5 for six bunches at the International Exhibition held at Edinburgh, but the victories that he remembers with most pleasure were winning the first prize in the Town Hall, Newcastle, only seventeen months after his Vines were planted, there being fourteen competitors, and the £5 prize at the show held in connection with the exhibition held on the Town Moor, Newcastle. But Mr. Witherspoon relies greatly on his method of marketing, by personal delivery. He makes sure that his patrons secure his Grapes with bloom as fresh as when hanging on the Vine. Save to visitors he takes no private orders, all his fruit being forwarded to agents in Newcastle. Mr. Witherspoon says that his success is due to unremitting study and close attention, coupled with the use of a hot-water boiler which he has invented, and which is known as the 'Red Rose Boiler.'"

—— NOTTS HORTICULTURAL AND BOTANICAL SOCIETY.—At the last monthly meeting of this Society, held on the 9th inst., there was a large attendance. Cut flowers and flowering and foliage plants were exhibited, money prizes being offered for the first time for the most meritorious collections. Mr. Alfred Page (Hon. Treasurer) exhibited an excellent collection of hothouse ornamental foliage and flowering plants, including Gladiolus, Caladiums, Cypripediums, Pelargoniums, Orchids, Masdevallias, Caladiums, and a fine sample of the Dendrobium nobile. Mr. W. H. Farmer (gardener, Mr. Attenborough) showed some magnificent pots of Mignonette, various cut flowers, and Roses. Mr. S. Thacker had a pretty display of delicate Orchid blooms, which were much admired. Messrs. Pearson, Chilwell, contributed a splendid collection of Narcissi and Daffodils, there being eighteen varieties, also thirteen varieties of forced Tulips and four trusses of a new variety of Pelargonium. Among the other exhibitors were Mr. Hallam, a collection of cut Roses; Mr. Massey (gardener, Mr. Bateman), a collection of Alpine Auriculas; Mr. Halford (gardener to Mr. Taylor), a fine spray of Cytisus; and Mr. C. J. Mee (Wollaton Hall Gardens), a choice collection of cut flowers, including a remarkably fine forced spray of ordinary white Lily, forced Lilac, and Wistaria. He also had a specimen of forced Rhubarb and Kidney Beans. The Judges awarded the prizes, which amounted altogether to £4, to the following exhibitors:—Mr. Page (gardener, Mr. J. W. Davis), £1 1s.; Messrs. Pearson (for Tulips), Mr. S. Thacker, and Mr. C. J. Mee, 14s. each; Mr. W. H. Farmer, 8s.; Mr. Hallam, 7s.; Mr. Massey, 5s.; and Mr. Halford, 1s. Illuminated certificates of merit, framed in oak, were presented to Mr. N. H. Pownall (Lenton Hall Gardens), and to Mr. H. Walker (Hardwicke House Gardens), for essays on the subject of "The Duty of a Gardener to his Employer," read at the April meeting of the Society. A certificate was also awarded to Mr. J. Taylor for specimens of Cinerarias and Primulas exhibited at the March meeting. An interesting discussion on the respective merits and cultivation of the various plants and flowers took place, Mr. Thacker being voted to the chair. Mr. Pearson gave some valuable hints with respect to the arrangement of flora for exhibition on scientific against artistic principles. In the early portion of the evening Mr. A. Morley, M.P., accompanied by Mr. Cyril Flower, M.P., visited the exhibition, and was shown round the room by Mr. E. Steward (Secretary). The Judges were Messrs. Gadd, C. E. Pearson, and Pownall.

—— ENGLISH TOBACCO CULTIVATION.—The Judges appointed to determine the award for the prize of £50 offered by the London Chamber of Commerce for the best specimens of British-grown Tobacco met last Friday in the Fenchurch Street Warehouse of the East and West India Dock Company. There were eleven entries submitted, but only four of these fulfilled the conditions of the competition so far as weight was concerned, the minimum quantity being fixed at 400 lbs. In the result these were placed in the following order of merit:—(1) Messrs. James Carter & Co., High Holborn, W.C. (to whom the Judges recommended that the prize should be awarded); (2) Mr. W. L. Wigan, Larkfield House, Maidstone; (3) Sir Edward Birkbeck, Bart., M.P., Norwich; (4) Mr. John Graves, Church Villa, Skirbeck, Boston, Lincolnshire. Amongst the samples not intended for competition was a very fine lot of Irish growth, sent by Mr. John Cairns, 12, Windsor Avenue, Fairview, Dublin, which was much admired. Some specimens forwarded by Sir Spencer Maryon Wilson, Uckfield, Sussex, were also highly commended. None of the samples of Tobacco submitted were really in a merchantable condition, so that it would appear that English growers have a great deal to learn, especially as regards curing. A full and detailed report will be issued by the London Chamber of Commerce in due course, relative to the whole of the specimens submitted for competition, and it has been arranged that the qualities of the Tobacco shall be tested both chemically and for manufacturing purposes.

GARDENERS' ORPHAN FUND.

THE progress that continues to be made in the furtherance of this charity is very gratifying, and nothing but good can be the outcome of the exertions of friends on its behalf. A step in advance is now being taken on new lines. As the result of a special Committee meeting held on Friday night last, the following letter of invitation, which explains the object in view, was promptly issued to the growers of plants for Covent Garden Market.

"Dear Sir,—I beg to inform you that His Grace The Duke of Bedford, has very generously given his consent to an evening promenade being held in the Flower Market, Covent Garden, in aid of the Gardeners' Orphan Fund.

"The proposition is for the stand-holders to stage their market produce at an earlier hour than usual (the hour and day to be subsequently fixed), and to admit by special invitation the Members of both Houses of Parliament and their families, together with the *élite* of London society, to view their products.

"To carry this scheme out it will be necessary to obtain the co-operation of the stand-holders, and for that purpose a meeting will be held at eight o'clock, on Monday evening next, the 14th inst., at the "Hummums Hotel," Covent Garden, when your attendance is cordially invited.—Yours faithfully, A. F. BARRON, *Hon. Secretary*."

Though the notice was so short, there was an excellent attendance at the meeting; and J. R. Bourne, Esq., the Duke of Bedford's London steward, was unanimously elected as Chairman on the occasion. After Mr. G. Deal had lucidly explained the history, object, and working of the Fund, the Chairman expressed his great sympathy with the charity, and said that every facility would be accorded for carrying out the object in view, and ventured to assert that if the skilled cultivators gave their willing co-operation, that such a floral fête would be provided as had not been seen by the public of London, and which, in its way, could not be equalled in Europe. The following resolution was then proposed, and carried with spontaniety;—

"That in the opinion of this meeting, the Gardeners' Orphan Fund is in every respect worthy of the sympathy and support of all horticulturists, and those present hereby pledge themselves to render every assistance in their power to successfully carry out an evening Floral Promenade Fête, suggested to be held in the Wholesale Flower Market, Covent Garden, kindly offered for the occasion by his Grace the Duke of Bedford."

A Committee of market growers was next formed to act with a Sub-Committee of the Orphan Fund to carry out the project, the former (with power to add to the number) consisting of Messrs. Hayes, Walker, Sweet, Munro, Poupart, with the Chairman of the meeting and Mr. J. Asbee, the Superintendent of the Market; the latter comprising Messrs. Deal, Dean, Barron, Wynne, Herbst, Richards, and Wright.

Mr. Assbee then addressed the meeting, and in a stirring speech expressed his belief that there is not a man in the Market who would not do his best in furnishing his stand for the occasion. The Flower Market can only be seen at its best by the public at daybreak, and few persons have any idea of the beauty of the scene. The vast majority of persons judge Covent Garden by its Central Avenue; they have never seen the great "Flower Market" furnished, and for the first time it will be opened in the evening of a day to be fixed on behalf of the Fund, in which he knew all the "growers" had great sympathy. They would display their enterprise and skill, and their fame would be spread by visitors to the coming feast of flowers.

Cordial votes of thanks to the Chairman and Mr. Assbee brought the proceedings, which were of an enthusiastic character, to a close.

A STRAWBERRY PUZZLE.

FORCED STRAWBERRIES BARREN.

MAY I inquire if some of your readers can give an explanation of the large per-centage of barren Strawberries here for the last seven years—viz., 60 to 80 per cent. of the pots proving barren? The number potted is 1200 each year. The varieties are La Grosse Sucrée, Vicomtesse Hericart de Thury, Keens' Seedling, President, and Sir Joseph Paxton. Outside they fruit well, but in pots they fail largely. They have been tried under every condition of soil and pot we could think of—viz., in

5½, 6½, 7 and 8-inch pots; in double pots—viz., 7-inch plunged in additional material; in 8-inch pots; in the top spit of a fine clay pasture; in ordinary soil; in a fine clay pasture, top spit decayed, and one-third cow manure added; with and without liquid manure made of horse dung, and a small quantity of soot weak twice per week, with plain weak guano water. Two hundred two-year-old plants were tried with a like result. They have good heat, 60° to 70°, and abundant moisture, three to four times a day, are near the glass, quite close to it, in a special Strawberry house.

The runners are not taken from barren plants, but from fruiting plants, sometimes raised in 5-inch and sometimes 6-inch pots; they have plenty of sun and air (3-feet alleys), and are repotted. Runners are taken sometimes from two-year-old plantations, and at other times from four-year-old plantations. We cannot discover the cause of the failure. Can any of your readers suggest a probable cause and remedy? Seven next years ago we had magnificent crops, but the same man failed the two succeeding years, and all trials by others since are failures.—T. J.

[We shall be glad if our Strawberry-forcing readers will state their views on this case in compliance with the desire of our correspondent.]



FIG. 52.—HARDENBERGIA COMPTONIANA.

HARDENBERGIA COMPTONIANA.

FOR many years this plant was generally known as Kennedya Comptoniana; in some gardens or nurseries it still bears the same designation; occasionally, too, it may be seen under the generic title Glycine, but that given above is the one now adopted by most botanists, and is gradually supplanting the others. It matters little, however, in a horticultural point of view what name a plant bears. "A Rose by any other name would smell as sweet" is a truism which applies to this as well as to many others that possess sufficient merit to insure them a permanent place in gardens. When trained to the roof of a greenhouse or conservatory, and bearing its long pendulous dense racemes of brilliant blue flowers, the beauty of this charming Leguminous plant can be fully appreciated, especially if it be associated with climbers bearing lighter or distinctly coloured flowers, as the contrast shows it to better advantage. If planted in a border the soil must be specially prepared, a compost of peat, light turfy loam, and sand being suitable, providing good drainage, whether it be grown in a pot or border, as, like many of its relatives, it cannot endure stagnant moisture about the roots. Some care, too, is needed to keep the plant free from insects, particularly mealy bug, which has a great liking for it. Little pruning is requisite, except to remove the old bare or weakly shoots.

The flowers, though small, are borne in such dense racemes that their size individually is scarcely noticeable. The petals, keel, and standard are bright rich blue, the last-mentioned portion of the flower having a ring of white at the base, which renders by contrast the blue colour even more intense. The racemes vary from 4 to 6 or 8 inches long, but they do not often reach the largest size, except in old established plants, and young specimens are sometimes rather shy in flowering.

Hardenbergia Comptoniana is a native of Australia, and was introduced to this country early in the present century. The woodcut (fig. 52) represents a spray from an established plant, and well shows the chief characters both of flowers and foliage.

CANTUA DEPENDENS.

SEVERAL Cantuas are grown in gardens, the best known being C. buxifolia, and a new relative of this is C. dependens, shown in fig. 53. They are all evergreen plants from Peru, and allied to the Phloxes and Polemoniums of our borders, though differing from them widely in habit. The Cantuas require a greenhouse temperature, and seem most at home when planted out and trained to pillars or walls, as their long drooping flowers are then seen to greatest advantage. In this way Mr. Ross grows C. dependens at Pendell Court, and the fine flowers he recently showed at the Royal Horticultural Society's meeting, as represented in our engraving, amply indicated the success of the system adopted. The flowers have an orange red coloured tube, with bright rosy crimson spreading lobes, and they are produced freely from the axils of the leaves, being somewhat clustered at the ends of the shoots. A compost

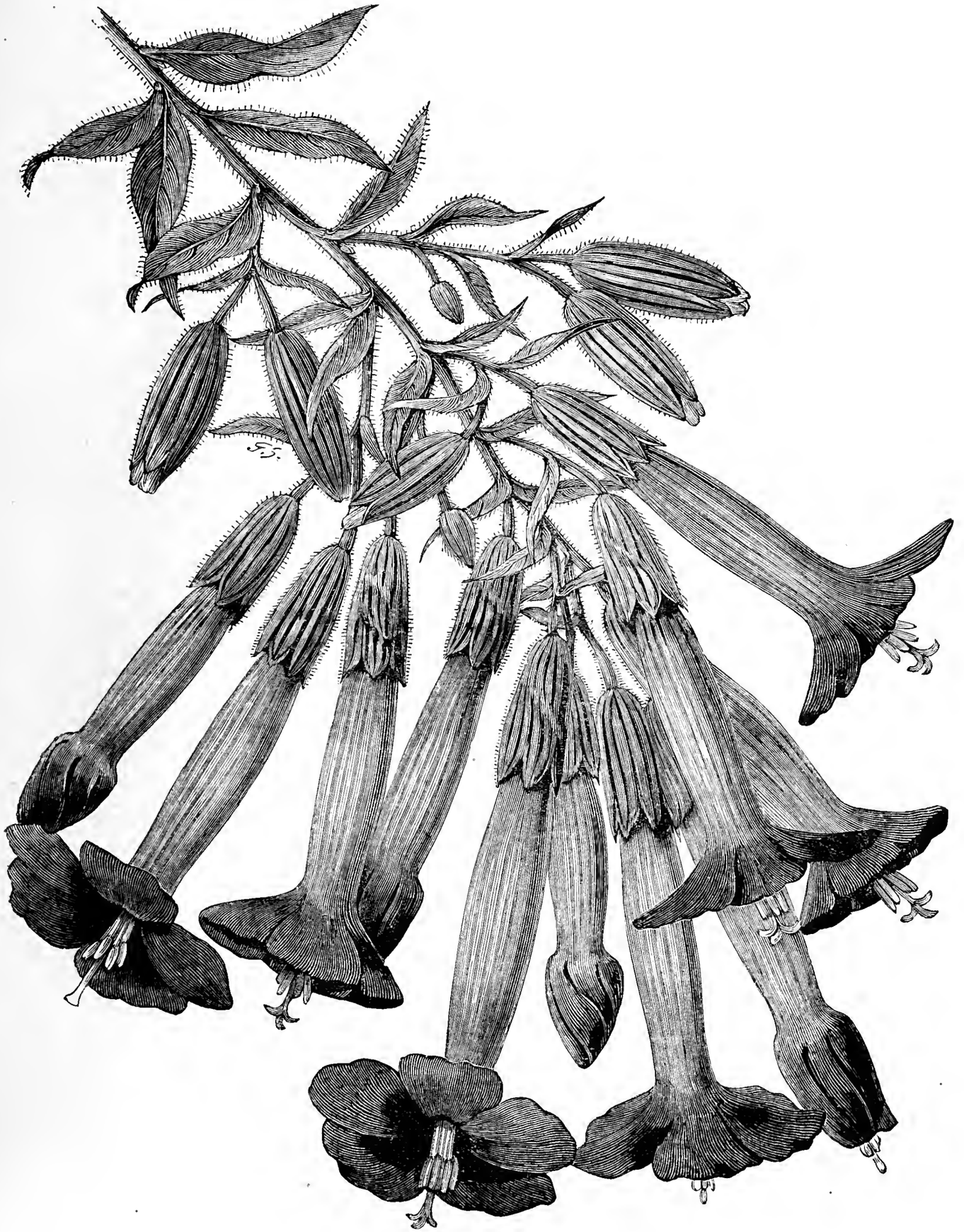


FIG. 53.—CANTUA DEPENDENS.

of light turfy loam, sand, and peat, or leaf soil, suits the Cantuas admirably, whether grown in pots or planted out.

THREE GOOD POTATOES.

It may be late to write about Potatoes after the planting is practically completed, still there is time for planting for raising a stock of tubers in the autumn, not for use, but further planting; therefore a brief record of experience with three of the newer sorts may just be in time to be useful.

On light soils M.P. is one of the best second early varieties that can be grown. Planted with the main crop of Myatt's it is ready to dig and be eaten when they are ready. When large enough, even before the skins are set, it is highly presentable when cooked, being very white, mealy, and in quality all that can be desired. Last season it cropped heavily with us, and although the haulms were dead before rain came there were very few small tubers. This should prove valuable for market purposes. Although ripe and ready for use early in the season it is perfectly good until the end of the year.

Welford Park, a very strong-growing late kidney variety, cropped heavily with us. The tubers are excellent in quality, and the ground was full of them, the rows 2 feet 3 inches apart, and the sets a foot asunder.

Chiswick Favourite, if I judge rightly, has a future before it, and will, I venture to predict, supplant for field culture the well-known and largely cultivated Scotch Champion. It is too robust in growth for small gardens. The crops were heavy, tubers large, round, and the eyes shallow. The quality is all that can be desired, and although the tubers have grown large I have only cut one that showed the least signs of being hollow in the centre, and nearly all are well-shaped.

The last season pointed out valuable lessons, and the observant may and should profit largely in the future. Those who worked the land thoroughly and applied manure liberally had the best of it last year, for high-class culture showed itself unmistakeably in both the field and garden. We had nearly double the weight of Potatoes from land that had been trenched over that which had been dug only one spit deep, though the last had the benefit of position. Both were planted at the same time with seed of the same variety. The contrast was so striking that we trenched deeply for the next autumn crop. For cropping with Potatoes more of the bottom soil may with advantage be brought to the surface than would be wise for many crops. A crop of Potatoes with Brussels Sprouts, or Autumn Giant Cauliflowers, planted between the rows gives the soil turned to the surface every chance of being sufficiently enriched and in good condition for any crop in the following year.—Wm. Bardney.

ARTIFICIAL MANURES.

I cannot refrain from congratulating Mr. Coomber on the evident earnestness with which he has set about clearing away some of the dust that for a time obscured the main points of this controversy, and as he has fully impressed upon my mind the importance of tracing every effect to its cause, I will endeavour to bring that principle into action by trying to find out the cause of so much "dust arising." After duly considering the facts of the case I come to the conclusion that in this instance the cause is the inconsistency of some of his statements in the first place, and also by the placing of too high a value upon a rudimentary knowledge of chemistry, his observations conveying the idea that a smattering of chemistry is more to be depended upon than a large amount of experience. I fully believe in the principle that competition and legitimate criticism are often the incentives to progress, and I trust that this controversy has caused us to reflect more thoroughly on the means we take to obtain the object in view, and ascertain by the help of hard facts how far theories can be reduced to a practical system having advantages over practice already proved to be good. Now, my opponent and myself are travelling in the same direction, as I fully recognise the importance of chemical knowledge in our treatment of plants and crops, but we differ considerably in our manner of putting that knowledge into practice. I am perfectly willing to abandon the well-tried method of giving plants at certain times a change in the form of the manure supplied to them, provided I have absolute proof that I can obtain better results by other means, and I hold it is altogether illogical to do so until then. My views are perfectly in accord with his when he says I oppose being contented with such clumsy and blind methods of supplying plant food. But I think it will serve no useful purpose to aim at such nicely proportioned chemical combinations as my opponent advocates, as scientific research has proved that in some cases only 10 lbs. and in others 50 lbs. of phosphoric acid put into the soil is taken up by a given crop, and it is quite unknown why this is so. It also shows that it is not necessary to measure out phosphoric acid and potash, for reasons I shall presently explain.

Your correspondent asks, Does the constitution of a plant improve because its bulk increases? My answer is, Yes, provided that plant has within its reach a sufficient quantity of the principal solidifying agents, such as phosphoric acid, potash, &c., to supply the drain that is made upon its resources when building up that growth, and also that the weather is favourable for ripening it. This is, I consider, the rock on which the arguments of my opponent split. He does not take into consideration the various stages of growth that plants pass through, and the condition they are in at the time manures are applied, and this is quite as important as placing the right kind of food within their reach. There is a right and wrong time for applying certain portions of plant food. On these lines gardeners have been working in the right direction when giving weak liquid manure at first, and gradually increasing its strength as the strain on the energies of vegetation becomes the greatest, and then gradually withholding it, or rather certain parts of it, as that strain is lessened. The aim of gardeners is to produce the greatest possible bulk (consistent with good quality) in a given space, and to do that we must have vigour, and that vigour should be limited in extent to the amount that can be properly ripened and solidified. This is not regulated by the influence of phosphatic substances alone, but also by the influence of light, air, and water, so that in addition to the food plants receive from the soil they depend in a great measure upon light and heat. In wet cold seasons garden and farm crops should not receive so much highly stimulating food as in bright ones, and if food is given upon the lines I am about to state this difference can be more easily adjusted than by what I will call the "properly proportioned combination theory." The results of the latest scientific investigations show that the true system of manuring plants is this, that we should give to the soil phosphoric acid and potash, and all other solidifying elements, paying the greatest attention to the two named, and in doing this no waste will result, because the soil has the power of retaining within itself for the use of future crops that portion of these elements not required for the use of the present one, and Nature has so ordered it that the amount of growth made by vegetation is regulated by the supply of nitrogen at its command; but soluble nitrogen should be measured out to the plants, and not be given in excess, because the entire supply is at the disposal of the plants even in times of the greatest need.

A knowledge of these facts enables us to supply plants with the right food at the right time, and also shows us that such stimulants as nitrate and guano and ammoniacal manures in general can be applied at the wrong time, as they are quick in their action on vegetation, and if more is given than the plants can assimilate in a given time it is simply waste, as water soon washes it from the reach of the roots, and in cases where the soil is not kept moist it may kill many of the tender roots. A want of nitrogen can be determined by the eye, as plants that have not a sufficient supply within their reach become pale and sickly in colour and stunted or feeble in growth; but such is an extreme case, and a supply of that element should be given whenever the result of daily observation shows that the encouragement of more vigour is desirable; but how much more vigour is desirable, and what quantity of these stimulating substances is required, can only be determined by actual experience. Our aim must be to produce such vigour in each particular plant as we have seen attended with the best results, because the amount of vigour from which the highest results are obtained are fixed by climate and weather, and therefore the varying conditions of these elements in each particular season must be taken into account. Here, then, is a simple and practical way of putting the science of chemistry into practical use in such a manner that the powers of keen observation with so much utility to gardeners can be brought into full play.

My views are fully in accordance with those of Mr. Coomber concerning the onward march of gardening, and I also fully recognise the importance of not being contented with blind and clumsy methods of carrying out our aims. But we must not go the other extreme and take it for granted that because theory tells us a certain thing should be so, that such is the case; the true test lies in proving by the help of hard facts which of the two confers the greatest advantages. These experiments must to a great extent be carried out by special investigators, as it is too wide a field of labour for gardeners (their time is too much taken up in attending to and arranging the practical details of gardening), till the result of the experiments already pointed out can give them simple and sound principles to work upon.

In support of his ideas my opponent puts forward the statement of an American cultivator of the Camellia, when he says that he has been using for some time a certain artificial manure for plants that have been in the same pots for ten years, and they are, he adds, as healthy and vigorous as recently potted plants, and so long as they remain in that highly satisfactory condition no one would think of advising him to change, as there are exceptions to every rule, which are often the result of special circumstances of which we have not the full particulars. As a set-off against this I will give an instance in support of what he calls my "pet theory." I recently saw an account of the splendid Eucharis house at Gunton, where Mr. Allen grows these plants so well, and in the remarks on their cultivation it states they had been fed with liquid manure made from cow or sheep's dung, and guano for a "change." Mr. Coomber not having attempted to put forward a cogent reason why plants so frequently become candidates for the rubbish heap when they pass from the hands of the market grower into well managed private gardens, I will give my ideas on the subject. They are doubtless fed with strong stimulants regularly when in market growers' hands in order to produce plants of large size in small pots, and by the time they change hands they are quite dependent on these regular supplies of food; yet in nine cases out of ten nothing but clear water is given without any gradual system of reducing such rich food being resorted to. The change is too sudden, and the result what may be expected. In my original article on this subject I pointed out the importance of gradually withholding stimulating manures from plants intended for decorative purposes. Before concluding I must touch on one other point. Does nitrate of soda leave the soil in an exhausted condition, as my opponent has contended throughout this discussion? This question has been dealt with in a work by Professor Paul Wagner, translated by G. G. Henderson, from which I will give an extract.

Is it true that manuring with nitrate of soda causes an excessive absorption of phosphoric acid and potash, and thereby diminishes the fertility of the soil? Though the opinion that nitrate of soda exhausts the soil very much, so that succeeding crops grow badly, and therefore that the advantage of manuring with nitrate is very problematical, is now rarely advanced, yet it seems to me necessary to correct in this place the error which lies in that opinion, and to make the actual circumstances clear through the results of new investigations. The following must be noted in the first place. If by manuring with 200 lbs. of nitrate of soda the yield of the field is increased by about 600 lbs. of Oats and 1000 lbs. of Oat straw, then, in round numbers, 22 lbs. of potash and 7½ of phosphoric acid are contained in this extra crop, and of course the soil will be so much the poorer through manuring with nitrate, unless these qualities are restored to the field. It is evident that larger crops will withdraw correspondingly larger quantities of nourishing materials from the soil, and that the question as to which substances and what quantities of these must be restored to the soil in order to preserve its fertility gains in importance as the yields increase; but it would be very illogical to wish to raise an objection to the use of nitrate of soda from the fact that it converts nourishing materials lying in the soil into plant substances, for it is the proper aim of agriculture to transform into field produce the raw material at our disposal in the soil and in manures.

This, then, I think clearly shows that nitrate of soda when judiciously used is capable of increasing the yield of crops and inducing a fertile growth in plants, in accordance with the sound judgment that is brought to bear upon its use, taking into consideration the circumstances already explained; and the conclusions I draw from these facts are, that plants do not really require such a nicely proportioned chemical combination as my opponent has contended. Provided the principal elements they require are present, and that the nitrogenous manures are used in the way described, his own description of the action of nitrate on the pasture bears out this statement, as it clearly shows that it was the nitrate of soda that stimulates the grass so as to bring out the full productive powers of the soil; and also that the deficiency thus caused in it was returned with interest in the form of phosphate of lime, carbonate of potash, and sulphate of potash, and various other substances, of which the dung and urine of animals are composed. I find, therefore, from a study of these valuable investigations that the manures I recommended in the first place to be given to plants for a change contain in conjunction with the soil all the really important elements needed for plant food, only those elements were not given in what my opponent would call a "properly proportioned combination of the elements needed," but used in a such a way that our knowledge of the habits of growth and purpose for which the various subjects were intended could be the better regulated according to the changing circumstances of light, air, heat, and water. It now only remains for me to thank you for the valuable space you have allowed me for the defence of my views; and also my opponent for the spirited and energetic but friendly way in which he has criticised them.—H. Dunkin.

[We think it due to our correspondents to express our acknowledgments of the ability displayed by both, and of the admirable tone maintained through the interesting controversy, which may be continued if desired.]

BLENHEIM PARK.

Amongst other improvements in progress at this celebrated ducal demesne we understand that the accumulated deposit of many years in the extensive lake is being removed, and that when the contemplated work is completed it will present as fair an appearance as it did more than half a century ago. The trunks of some of the old Oak trees in the park are of huge dimensions, some of them more than twelve paces round, veritable gnarled giants that have survived the storms of centuries. Many of them are passed on the approach to the gardens.

Little has been left standing of the old glass structures in the kitchen garden, or it would be more correct to say that there has been an immense addition in recent years to the plant houses. There is one block of, as near as we can remember, 118 feet in length with glazed corridors at each end. These in addition to others have been designed for cultivating Orchids, and it is manifest that a full measure of success has attended the undertaking, regarded both as to the enormous numbers of some of the kinds grown and their strikingly healthy appearance. An establishment that can furnish 1200 spikes of cool Orchids at once is, it must be admitted, one of an exceptionally limited class, and one that necessarily demands the most skilful management.

The progress at Blenheim has not, however, been entirely with respect to the glass department. The large bush and standard fruit trees that may be remembered as growing in the enclosed garden have been transplanted to a situation immediately outside, where they are now in eminently satisfactory condition. A selection of the best known varieties has been planted within the walls, and in numerous other respects there is much that is noteworthy. At every turn there is indication of the bold spirit of enterprise that prevails, together with evidence of promising success. The time is not far distant, judging from what has already been achieved, when Blenheim, from a horticultural point of view, will emerge from its final stages of transition a more perfectly appointed garden than at any other period in its history. The beauties of Blenheim it may be said are not confined to the 12 or more acres of garden proper which Mr. Whillans has so successfully dealt with, but there are panoramic views to be obtained that, like the sight of the 12,000 Odontoglossum Alexandræ, the groups of Cypripediums, and the lengths of dense masses of Stephanotis—festoons of fragrance—above Gardenia shrubs that are impressed on one's memory, invests the anticipation of a summer visit to the Park with feelings of real pleasure.—S. P. E. S.

ROYAL BOTANIC SOCIETY.

May 16th.

The summer shows of the above Society are invariably most attractive, and in fine weather large numbers of visitors attend. Unfortunately, although the Show was an exceedingly good one, the weather was very unfavourable, and the attendance in consequence was not so large as usual. The plants were admirably arranged by Mr. Coomber, the general effect at the entrance being varied yet harmonious, the side banks and slopes being occupied with numerous large specimen Roses, stove and greenhouse plants, and Azaleas, with fine central groups of Orchids, and choice non-competing plants and flowers.

A magnificent bank of Orchids was formed by the competing collections, and Mr. J. Cypher, Cheltenham, contributed two especially fine groups, winning the premier prizes both for twelve specimens and a group of Cattleyas and Lælias. The dozen specimens comprised fine masses of Cattleya citrina, C. Skinneri, C. intermedia superba, Lælia purpurata, and Odontoglossum vexillarium. The Cattleyas and Lælias in the other class included fine varieties of L. purpurata, two of which, nobilius and Arch Duchess, were certificated. Mr. James, Norwood, was second in both classes with large specimens. Mr. F. J. Hill, gardener to A. Little, Esq., The Barons, Twickenham, was first in the amateurs' class for twelve Orchids and in the corresponding class for Cattleyas and Lælias, and in both cases the plants were admirably grown examples of choice species and varieties. An interesting group of Orchids from Messrs. H. Low & Co., Clapton, occupied one of the side banks, for which a small silver medal was awarded.

Considerable space was occupied by Roses, which afforded some softer shades of colour than the Azaleas that usually occupy a good portion of their space. In the larger classes, Messrs. Paul & Son, Cheshunt; C. Turner, Jackman, and Rumsey were the prizewinners. Mr. P. Perry, gardener to W. G. Rowlett, Esq., The Woodlands, Cheshunt, exhibited well in the amateurs' class, and Messrs. Wm. Paul and Son, Waltham Cross, had a large non-competing group of Roses in pots and cut blooms, for which a silver medal was awarded.

Azaleas from Mr. C. Turner won first prizes, both with six large specimens and twelve small ones, all being profusely flowered and brilliant plants. Mr. G. Wheeler, gardener to Sir Julian Goldsmid, St. John's Lodge, Regent's Park, was first in the amateurs' class for six Azaleas, followed by Mr. R. Scott, gardener to Miss Foster, The Holme, Regent's Park.

Mr. H. James took the lead with twelve and six specimen stove and greenhouse plants, including Azaleas, Heaths, Anthuriums, and various hardwooded plants. Mr. W. Chapman, gardener to J. Spode, Esq., Hawkesyard Park, Rugeley, secured first honours for six stove and greenhouse plants in the amateurs' class with well-grown and evenly trained specimens of moderate size, but in excellent condition; and his premier collection of twelve specimens was equally commended, a vigorous example of Statice profusa and an evenly trained globular plant of Dracophyllum gracile being noteworthy.

Pelargoniums, both show and fancy varieties, formed handsome groups on opposite banks near the entrance to the tent, Mr. C. Turner gaining the leading honours, followed with fancy varieties by Mr. Phillips, gardener to R. W. Mann, Esq., Langley Broom, Slough, who was also first in the amateurs' class for show varieties, followed by Mr. Hill.

With hardy plants Messrs. Collins Brothers & Gabriel, Waterloo Bridge Road, won first honours, showing a fine group of nearly 100 effective specimens. Mr. T. S. Ware, Tottenham, was second with a much larger collection of smaller plants, and, in consequence, not quite so effective. Messrs. Paul & Son, Cheshunt, were third with a large group of small plants. Fine-foliage plants and Ferns were staged by Messrs. H. James, R. Butler, H. Offer, and G. Wheeler, who were awarded the principal prizes, the Palms generally being very healthy examples, but the Crotons were very deficient in colour.

Miscellaneous exhibits in addition to those already noted were as follows:—Messrs. J. Laing & Sons, Forest Hill, had a magnificent group of Azaleas, Imantophyllums, Tuberous Begonias, choice Orchids, Gloxinias, Caladiums, Dracænas, Palms, and Ferns, admirably arranged (large silver medal). Mr. B. S. Williams contributed a choice group of Orchids and fine-foliage plants (large silver medal). Messrs. Wm. Cutbush & Son, Highgate, exhibited an effective group of greenhouse plants (silver medal). Messrs. J. Carter & Co., High Holborn, had a group of fine Cinerarias (bronze medal). From Messrs. Cannell & Sons, Swanley, came a group of single and double Tuberous Begonias, representing some very fine varieties, also stands of Zonal Pelargoniums (bronze medal); from Mr. D. Phillips a group of Pelargoniums (bronze medal). Mr. J. Walker, Thame, showed two boxes of wonderfully fine Maréchal Niel Roses (bronze medal). Messrs. Barr & Son, Covent Garden, showed a large group of Daffodils and hardy flowers (large bronze medal).

Floricultural certificates were awarded to Mr. C. Turner for Azalea indica Theodore Reimers, double, purplish crimson; Louise Vervaene, double white; Amidu Cœur, large double red; and Vervaenianum, double salmon and white, fine. To Messrs. Carter & Co. for Mimulus Carter's Jubilee Prize, fine deep red, gold centre; to Mr. H. Bennett, Shepperton, for the bronze yellow Tea Rose, Princess Beatrice; to Messrs.

Laing & Sons for Caladium Charlemagne, large, deep red; Comte de Germiny, red, spotted white; and Clivia sulphurea, pale orange yellow; also for Clivia Orange Perfection and Gloxinia Madame Bleu. To Messrs. H. Cannell & Sons for Tuberous Begonias, Lady Mary Fitzwilliam, double rose; Miss W. F. Bennett, double pale yellow; and Enchantress, double salmon. To Mr. J. H. Virgo for Myosotis dissitiflora grandiflora, and to Messrs. Barr & Son for Narcissus poeticus grandiflorus, and to Messrs. W. Paul & Son for Tea Rose Sappho, rosy salmon in the bud, becoming pale yellow when expanded; and to Paul & Son, Cheshunt, for Geum miniatum.

Botanical certificates were awarded to Mr. J. Cypher, for Lælia purpurata Arch Duchess, with blush sepals and petals and deep crimson lip; and L. purpurata nobilis, with broad white petals and a large rich crimson lip.

AUSTRALIAN APPLES.

By this post I have sent you sample of five Apples plucked on or about 1st February last from my garden, and I shall be glad to hear in what condition they reach you. They are all of the usual size grown here except Ribston Pippin and Jonathan; most of the Ribston Pippins this year were from 9 to 12 inches in circumference. Home Rule is a fine keeping Apple, good for dessert and culinary purposes; it generally has a nice red cheek. Jonathan is generally one-third larger, and is bright red all over, a grand keeper, and good for any purpose. Burton's Pippin and Royal Russet are good market Apples, and no doubt are well known to you. American Apples are largely grown here and do well. If these Apples arrive in good order I shall be glad at any time to send you a sample case of the best varieties grown here, including many colonial-raised kinds. At present I devote only 10 acres to fruit culture.—John Patterson, *Calrossy, N.S.W., March 22nd, 1888.*

[We are obliged to our correspondent for his letter and samples, but sorry to say that only one fruit, Jonathan, arrived in a really sound state. Home Rule was fresh in appearance, but when cut proved discoloured and "fuzzy." Jonathan, beautiful dark red, with a bloom upon it like Red Astrachan, flesh yellow, remarkably juicy, with a very rich flavour unlike an Apple, and the aroma a mixture of rose and vanilla. Home Rule, a handsome Apple, like Golden Noble and Stirling Castle, the first being 13 inches in circumference.]

THE LATE MR. JOHN SMITH.

Many horticulturists will learn with much regret that Mr. John Smith, the second ex-curator of the Royal Gardens, Kew, died on Friday last after a fortnight's illness at his residence, 12, Hamilton Terrace, St. Margaret's, Twickenham. It will be remembered that Mr. Smith resigned his post at Kew two years ago in consequence of ill health, which had been caused to a great extent by a succession of severe domestic afflictions, and it is somewhat strange that he has survived his predecessor so short time, whose official career was marked by similar family troubles. Mr. Smith was born in Roxburghshire, and commenced his gardening career in 1841 by being apprenticed to Mr. C. Pillans, gardener to the Duke of Roxburgh, Floors Castle, Kelso. During the three years spent in this garden, which was then one of the most noted in Scotland for the skilful practice there displayed, he laid a good foundation for his after experience. At the end of that period Mr. Smith proceeded to Alnwick Castle Gardens, and he remained in the service of the Duke of Northumberland for twenty years. He worked at Alnwick Castle in a subordinate position until 1855, but the time so spent was most valuable in results, for by his assiduity and perseverance he gained the esteem of his noble employer, who assisted him in many ways. In the year named he went to Syon House Gardens to gain some knowledge of tropical fruit culture, returning to Alnwick in 1856, but was shortly afterwards appointed gardener on the Duke of Northumberland's estate, Werrington Park, Cornwall. Three years later—namely, in 1859—Mr. Ivison resigned the management of the Syon House Gardens, and Mr. J. Smith succeeded him. In 1864 the curatorship of Kew became vacant, and the appointment was offered by Sir William Hooker to Mr. J. Smith, whose qualifications for the post were well known. From then until 1886 he creditably discharged the difficult duties connected with the office of curator, and was much respected for his courtesy and kindliness of manner.

PLANTING HARDY PERENNIALS.

The weather being now more favourable for the planting, in continuing my selection of good plants I will first name—

Lithospermum prostratum.—An evergreen, shrubby alpine. This, when smothered in spring with brilliant blue flowers, is delightful in the extreme; it is of easy culture, succeeding well in deep, rather moist sandy loam, and given a position sheltered from east and north-east winds it always appears happy. I attach more importance to position for this plant than to soil, for if planted in exposed parts of ill-constructed rockeries, as is usually the case, one-half of the plant is blackish brown. Never plant it on a cold clay, it only lingers out an existence for a time.

Linum perenne album.—This very graceful plant does well in ordinary loam, and the great succession of its silvery white blossoms throughout the summer meet with many admirers.

Lobelia cardinalis and varieties.—Although I do not consider myself justified in including this among genuine hardy plants, it is so attractive and easily taken care of that I mention it by the way. It is perfectly hardy in certain soils and in certain seasons, but not those that Britishers too frequently experience. I know few plants that can be employed with such grand effect as these. Take as an example a few Cannas in the centre of a circular bed, around which may be Chrysanthemum frutescens with the vermilion scarlet of the Lobelia pushing its spikes well above all; or, again, Nicotiana affinis and the Lobelia blended make an excellent bed, and so on may we use the bronzy, crimson-leaved form called Queen Victoria, a most handsome plant when judiciously employed. When frosts arrive it may be lifted with a ball and cared for after the manner of Calceolarias, when the clumps will be grand for use again.

Lychnis chalcedonica.—The vivid scarlet heads of this fine perennial herbaceous plant have no equal among hardy plants. It is certainly one of the grandest of old-fashioned flowers. No plant is more easy of culture or more accommodating among hardy plants, while its glowing scarlet heads surpass anything I know. The type may readily be increased from seeds, and apart from this may be mentioned the double scarlet and double white; the first of these has flowers the same telling colour as the type, while the latter has whitish flowers, which cannot by any stretch of imagination be regarded as pure.

Lychnis diurna fl. pl.—In most hardy plant lists this is given (though erroneously) as L. dioica fl. pl., a totally distinct plant. In May the above commences flowering, and continues for some time; the flowers are of a rosy crimson hue, and produced in quantity. It is a very handsome free flowering perennial, adapted to almost any ordinary garden soil. If the spikes are taken off as they fade it will flower more or less throughout the summer.

Lychnis Haageana.—A very attractive and variable plant easily raised from seeds, the flowers ranging in colour from scarlet to milk white. It grows a foot or 15 inches high in good garden soil.

Lychnis viscaria splendens plena.—This is without doubt one of the best perennials in cultivation, both from a decorative point and also from its free and compact growth and flowering. From a close tuft of narrow leaves spring numerous stems thickly set with lively rosy red flowers, not unlike those of a double Stock, with the spikes produced in great quantities from even small plants. Its usual height is about 15 inches, consequently it is most attractive. This one is especially suited for massing, and may be used with great advantage in large or small gardens. It increases readily by division, and spare plants, if divided and planted at once, would make fine tufts for flowering next year. A fairly rich soil is beneficial to its well being.

Lychnis vespertina fl. pl. (Double White Campion).—This is the only pure double white Lychnis, and certainly a gem. It is synonymous with L. dioica alba pl. It is impossible to praise this too highly. Those who may require one of the most profuse of all perennials should get this if they do not already possess it. When well established it forms a perfect bush 3 feet high and as much through, and is not easily forgotten when seen in perfection. The blossoms individually are nearly 2 inches across, pure white, fragrant, and may be had in abundance from June to the arrival of autumn frosts. I have prolonged the flowering to Christmas by lifting and potting in the end of September. Few hardy plants are more deserving of liberal culture than this, and none repays so quickly and fully. Its comparative rarity may be traced to some little difficulty in propagating it, but as I have fully gone into this in the past pages of the Journal I will not detail it now.

Lupinus arborescens.—As fashion runs just now the soft pleasing yellow of this plant should find many admirers. As the specific name implies, it is tree-like in habit, and this fact gives rise to wonder why such an one, call it a tree, or flowering shrub, or what you may, is not more extensively employed in shrubbery planting. Given a few years, a handsome bush 12 feet across might easily be formed, and this in flower would, I think, make a feature in any garden. The association, too, of its glaucous glistening foliage with that of more sombre hue would also be an advantage, while its racemes of yellow fragrant flowers would be very pleasing. It is an excellent plant for the large rockery, where plenty of space for free development may be afforded, and while I have never seen it employed in isolated positions on the lawn, I am of opinion that it might make a very handsome plant for the purpose.

Lupinus polyphyllus vars.—The purple and white of these Lupins are very attractive, make bold effective plants when established, which they do quickly. They grow 3½ feet high, and should be placed in the back row. These are herbaceous, the same remark applying to L. nootkatensis, a dwarf species, 18 inches high, and having dark blue spikes of flowers.

Megaseas.—A distinct and attractive group of plants, with bold leathery leaves and panicles of variously coloured flowers. The hardiest are crassifolia, with rose-coloured flowers; cordifolia purpurea, purple magenta; and ligulata, having fine panicles of rose-coloured flowers. All are good for conservatory decoration, and the last named is used by Mr. Ingram at Belvoir in the spring garden with grand and telling effect. The several other species of this group, which is usually included with the Saxifragas, are more or less tender, and require either a frame or warm sheltered position to grow them well.

Monarda didyma (Bergamot).—A most refreshing plant by reason of its agreeable fragrance when drawn through the hand on passing it. For forming lines or for massing this is very effective. Its average height is 2½ feet, erect, numerous whorls of bright scarlet flowers being produced in great numbers even from a single plant. Will grow in any soil or situation.—J. H. E.



SALE OF THE LATE MR. DAY'S ORCHIDS.

SOME remarkable prices were realised at the sale last week of the late Mr. Day's Orchids, held in Stevens' Rooms, Covent Garden. A plant catalogued as Cypripedium Stonei platytænium, with two leads and twelve leaves, was sold for 152 guineas; but as there was a doubt as to its genuineness, Mr. Stevens gave a guarantee that should it flower within three years and prove not to be true, the money will be returned. Good prices were also realised for the following:—Cattleya exoniensis, 11 guineas; C. Skinneri, 10 guineas; C. Reineckiana, 11 guineas; C. Wagneri, £15 4s. 6d.; Cypripedium Morganiæ, £35 14s.; Vanda Lowi, 10 guineas; Cypripedium orphanum, £29; C. Sallieri, £14; C. Curtisi, 14 guineas; C. œnanthum, 11 guineas; C. præstans, 20 guineas; C. Charles Canham, £34 13s.; C. Curtisi and C. Harrisianum superbum, £20; C. Arthurianum, 20 guineas; C. leucorhodum, 68 guineas; and Cœlogyne cristata alba, 30 guineas.

ODONTOGLOSSUM CAMBRIDGEANUM.

ONE of the numberless beautiful Odontoglossums which are designated natural hybrids or varieties flowered some time ago at Cambridge Lodge, Camberwell, the residence of R. J. Measures, Esq., and was, I understand, referred to Professor Reichenbach for determination and name. It is notable for the size of the flowers and their bright colours, the sepals being a rich reddish brown tipped with yellow, the petals of similar colour, with an irregular yellow centre and deeper yellow tips; the lip beautifully fringed, bright crimson in the centre, and a broad marginal band of creamy yellow. The flowers, though not "filled up," as like the varieties of O. crispum with broad petals and sepals, have a graceful and distinct appearance.—L.

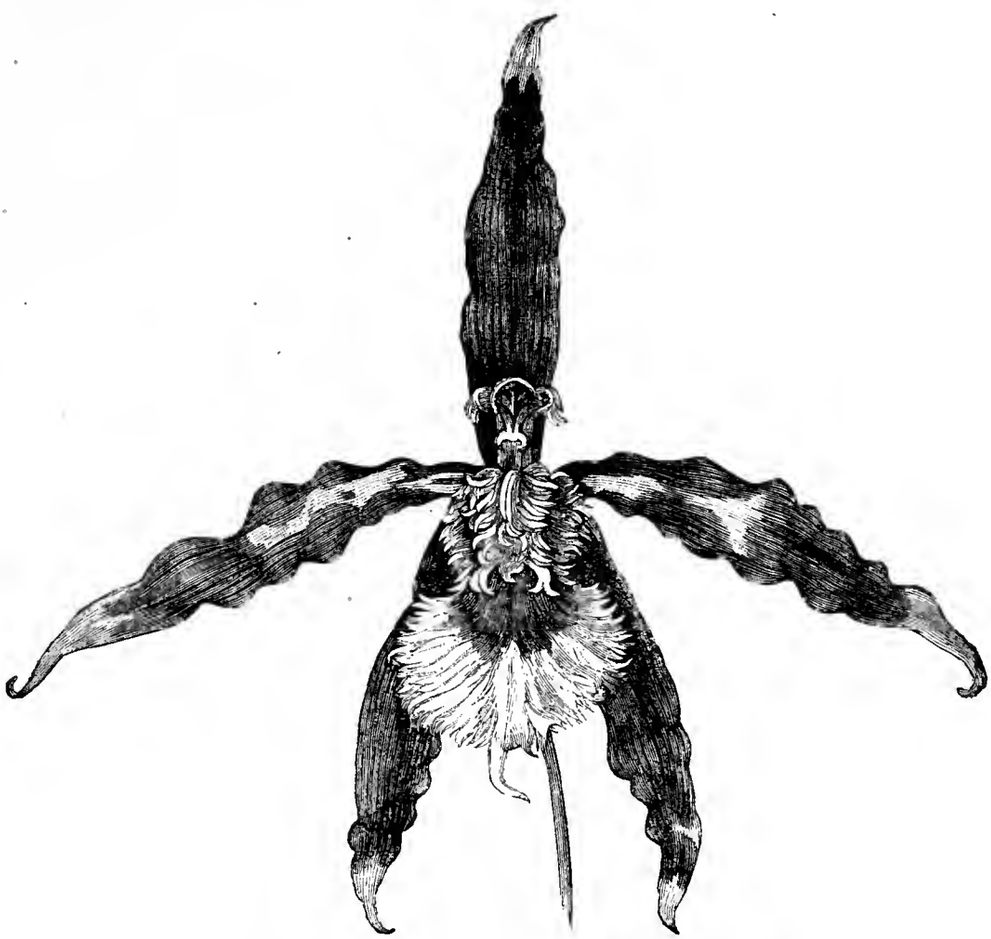


FIG. 54.—ODONTOGLOSSUM CAMBRIDGEANUM.

CHELTENHAM SPRING SHOW.

MAY 10TH.

THIS proved to be a most successful Exhibition in every respect. The weather on the whole was favourable, and the numerous visitors had every reason to be well pleased with the varied and excellent display brought together. It was held in the grounds connected with the Winter Garden, and very much credit is due to the energetic Secretary, Mr. W. H. Bridgwater, and the Committee generally, for the way in which everything was managed.

In the principal classes for choice flowering plants, Mr. J. Cypher, as might be expected, had matters very much his own way. His twelve stove and greenhouse plants were remarkably fresh and good, and consisted of Ericas Cavendishi, affinis, and ventricosa magnifica; Azaleas Cedo Nulli and Mrs. Turner; Anthuriums Schertzerianum and Veitchi; Pimeleas spectabilis and Hendersoni; Hedaroma tulipifera, Aphelexis macrantha purpurea, and Aphelexis spectabilis. In the class for six plants, Mr. Simcox (gardener, G. Nevile Wyatt) was first, and Messrs. Heath & Son, the exhibits being praiseworthy in each instance. With ten large Indian Azaleas Mr. J. Cypher was well first, Roi d'Holland being exceptionally good, and Messrs. Heath & Son were second. The best six Azaleas were shown by Sir A. Ramsay, Bart., among whose generally excellent group, the most noteworthy being perfectly flowered specimens of Bernhard Andreas and Stella. Mr. Simcoe was second. There was also a class for small untrained plants, and with these Mr. J. Cypher was first and Messrs. Heath & Son second. Similar positions were held by these exhibitors in the class for twenty plants grouped for effect, this giving a good opportunity for the introduction of a few choice Palms and other fine-foliaged plants, as well as a few in flower. Mr. Cypher was also first for a beautiful basket of plants, the second prize being well won by Mr. Wonson, gardener to Mrs. Thompson.

Orchids were a great feature in this display, grandly flowered plants being staged. In the nurserymen's class for nine specimens Mr. J. Cypher was well first, having a fine Cattleya Mossiæ with thirty blooms, C. Skinneri oculata, C. Mendeli with twenty grand blooms, a very fine variety of Lælia purpurata carrying sixteen blooms, Odontoglossum vexillarium with fully 100 blooms, Cattleya citrina, a grand plant carrying twenty-four blooms, a very fine specimen of Oncidium ampliatum, Dendrobium nobile crowded with flowers, and Calanthe veratrifolia. Messrs. Heath & Son were second with large well flowered specimens. In a corresponding class for amateurs Mr. Simcox was first, principally owing to the greater variety included in the collection, among which, however, being several made up specimens, as well as some good pieces of Odontoglossum Andersoni and Cattleya Skinneri. Sir A. Ramsey was second with a well flowered lot of plants, his best being Cattleyas Mendeli and Mossiæ, Lælia purpurata, and Saccolabium præmorsum.

The best eight Roses in pots were staged by Messrs. Heath & Son, Mr. G. Clift, gardener to Mr. Graves, being a good second, the last named having a capital specimen of Niphetos. The herbaceous plants in pots were very good and attracted much attention; Mr. E. Smith was first and Messrs. Heath & Son second. Gloxinias were well shown by Messrs. Simcox and — Lewis, gardener to Mrs. Lingwood; Calceolarias by Sir A. Ramsey, Mr. Lewis, and Mr. J. Pilgrim; Cinerarias by Messrs. E. Smith and J. Pilgrim; Pelargoniums by Mr. W. Sparkes, gardener to H. Chapman, Esq., and Mr. J. E. Pilgrim; Fancy Pelargoniums by Mr. G. Mayo, gardener to P. H. Osborne, Esq., and Mr. H. P. Sparkes; and Pansies in pots by Mr. Enos Smith, the exhibitors receiving the awards in the order named. Messrs. Heath & Son were first for twelve cut blooms of Roses, and Mr. A. James, gardener to the Rev. G. Coventry, second. Mr. Simcox was the only exhibitor of twelve varieties of stove and greenhouse plants (cut blooms) and was deservedly awarded the first prize. With three tastefully arranged vases for the dinner table Mr. Mansfield, gardener to Mrs. Gillilan, was first, and Mrs. McNeil second.

Vegetables are always good and plentiful at the Cheltenham shows, and on this occasion were fully equal to any shown in more favourable seasons. In addition to two classes for collections, there were also others provided for single dishes of Asparagus, Cucumbers, Mushrooms, Potatoes, French Beans, Tomatoes, Peas, and salading. The principal prizewinners were Messrs. A. J. Skinner, A. James, J. J. Smith, A. Cook, Turk, G. Clift, J. G. Kitching, and Wright, gardener to C. Lee Campbell, Esq.

There were several other exhibitors in various classes whose contributions we are unable to notice, but the Show altogether was very satisfactory and creditable to the district.



KITCHEN GARDEN.

THINNING YOUNG VEGETABLES.—The recent weather has caused Carrots, Turnips, Parsnips, and other young vegetables to grow rapidly, and if they become very crowded much harm will be done; it is therefore most important that thinning receive attention. Some are afraid to thin early, as they think should some of the plants fail those remaining will take their place, but they are much more apt to fail when crowded to excess than when they can develope freely from the first, and if failure is to be avoided from beginning to end, early thinning should invariably be practised. In thinning always draw up the weakest plants, and if they are left 3 inches or so apart the first time they can be thinned to the proper distance subsequently as they gain size. It is at first they are most apt to become crowded, and when once relieved their success is certain. Where the crops are extensive take a narrow Dutch hoe and push it through the rows, leaving a little bunch of plants every 3 or 4 inches, then thin these with the hand. A drag hoe may also be used for this purpose.

KIDNEY BEANS.—Those in pots have been doing good service of late. At this season they fruit almost as freely as in the open, and it is a good plan to gather the pods frequently, as when they get the least old they have an injurious influence on the younger ones. If you want to cut the crop short allow the pods to remain on after the Beans begin to form inside them, but if constantly gathered before this occurs they will grow and swell freely to the last. As soon as they are all gathered throw the plants away, and do not allow them to remain in vineries or Peach houses now, as red spider increases rapidly, and it is sure to spread to the fruit trees. The first crop has been sown in the open, but the plants are not yet through the soil, and if more is sown under protection they will pod before those in the open air are in flower. Potato frames are now being emptied, and the soil may be levelled down and the Beans sown as if in the open ground.

CELERY.—Plant all early Celery out in the trenches at once; single rows are the best for fine choice heads. Do not apply too much manure to any of them. The best produce is secured from moderately rich soil. Make the soil very firm round the plants. Water thoroughly immediately after the planting is done should the weather be dry, and plant Lettuces on the top of the ridges between the trenches. Our finest Lettuces are secured from this position. Sow Celery seed for the autumn supply of plants in boxes or a frame; give a little heat until the plants are 1 or 2 inches high, and then keep them cool and robust. Our old Celery is still lasting, but it is going to seed, and is only useful for flavouring. Do not throw any away until the new is ready.

AUGUST PEAS.—There will be some Peas ready in June and plenty in July, but good Peas are scarce in August. This is a mistake. Peas may be more difficult to secure in August than July, but if as much attention were given to August Peas as to the first crops how useful they would be. It is dry weather that tells against August Peas, but if this was properly provided for they would always be a success. The trench system of sowing should invariably be adopted. Form the trenches to the depth of 1 foot or 15 inches, fork the manure well down below this, and then sow the seed 6 inches or so from the surface. The weather will have little or no influence over them then, the pods will form freely and the Peas come tender and juicy. Now is the time for sowing Peas for bearing in August, and cultivators should try and do a few rows thoroughly well, as the produce would meet with much favour.

BROCCOLI.—Veitch's Model and Sutton's Late Queen are now heading well. The first is the better flavoured of the two, and should be grown largely for use in May. The present is a good time for noting the qualities of late sorts, and only the best should be grown in another season or sown now. If some of those which have not yet shown heads are dug up and laid in in a cool border they will be retarded for a fortnight, and will be very acceptable in cases where early Cauliflowers are behind. All Broccoli seed should now be sown. Give it moderately good soil and sow thinly.

CUTTING ASPARAGUS.—We have not written of this before because until now we had little to cut. With us it is three weeks later than in the majority of seasons, but it is coming now, and evidently has not suffered by being late. Established roots will not be injured by cutting every stalk that comes up during the next fortnight. The more good roots are cut the more are the growths that are dormant induced to grow. Careless cutters often only take the tops, and cut the stems half way up, but this is a great waste, as they are generally good down to the soil level, or a little below it, and every one should be cut as low as this at least.

EARTHING UP EARLY POTATOES.—The early Potatoes in the borders are now 6 inches high. The whole of them should be earthed up. Use a drag hoe, draw the soil well up to the stems on each side, and this will protect the stems and prevent the surface tubers becoming green.

HERBS.—Plants of Sage, Thyme, &c., requiring more room may now be transplanted. Give them rich soil. Keep Mint free from weeds. Give Sweet Basil more room under glass. It cannot yet be grown in the open. We keep it in pots or boxes until some of the frames are emptied of their spring crops, and then fill a frame with it. Do not grow superfluous herbs, but Mint, Sage, and Thyme are always wanted. The former may be increased by dividing the roots; the latter two are easily raised from seed that should be sown now.

Plant out a row or two of early Celery, transplant Asparagus without delay, make up blanks in early Cauliflower plantations, thin Turnips, sow more Peas, earth up Broad Beans, pull up all weeds, and sprinkle soot over autumn Onions, when the weather is favourable for such work.

FRUIT FORCING.

VINES.—*Temperature.*—The last few days of bright weather have greatly improved the condition of Vine foliage. Employ as little fire heat as possible, for with sun heat and plenty of atmospheric moisture more real benefit is gained in a week than in a month of dull weather with the aid of fires. The Vines being in full growth the temperature may be allowed to rise to 90° or 95°, closing the house at 85°, employing fire heat only to maintain a temperature of 70° to 75°, and to prevent in falling below 65° at night. These remarks apply only to Vines in full growth, as those that have the Grapes approaching ripening should have a rather free circulation of air, those well advanced in ripening being kept cooler and drier. Air should be admitted very early in the morning, as the sun's rays act powerfully on the condensed moisture formed on the foliage during the night, causing scorching, unless air has been previously admitted.

Watering.—It is usual to supply water at stated intervals—viz., to render the border thoroughly moist when starting the Vines, when the Grapes attain to thinning size, and when they are commencing to ripen. Those are very good as regards watering from a feeding point of view, and ought to be carefully attended to; but inside borders must be watered more frequently. There are more failures from insufficient than over-watering, the borders being properly constructed and the drainage complete. Watering twice a week in the case of those with the roots restricted to borders of limited extent, and once a week for those that have a good run of border, is not too much from the Grapes swelling after thinning until the berries are changing colour. There is, however, a great difference in the retentive power of soils. Some loams are naturally very loose, sandy, or gravelly, and they have the usual opening materials added, as lime rubbish and charcoal, which makes them still more sieve-like; the consequence is the greater need of the watering pot, besides the danger attending the finish of Grapes grown on such soil through insufficient supplies of water leading to attacks of red spider and thin foliage, which does not store nearly so much assimilated matter as the thick and leathery leaves on Vines in a firm soil of a rather retentive nature. Such soil will require water less frequently, but in no case must there be lack of moisture at the roots throughout the swelling period.

Houses of Ripe Grapes.—Afford fire heat only to prevent the temperature falling below 60°, and to admit of a rather free circulation of air. Do not allow the border to become very dry, but keep it moist, and mulch with rather dry litter from which the dung is removed; it will retain moisture a long time, and lessen the evaporation from the surface of the border, though a little moisture in the atmosphere is not injurious to the Grapes, and is highly beneficial to the foliage, which must be kept clean and healthy. Fumigation must be resorted to if thrips appear; for red spider there is no safer remedy than the tedious process of carefully sponging the leaves with soapy water. A double thickness of herring nets should be placed over the roof lights where Black Hamburghs are hanging in order to enable them to keep their colour.

Late Vines.—These will be in flower in most places. Maintain a minimum temperature of 70°; shaking the rods twice a day will be sufficient in most cases to distribute the pollen effectually, but in the case of shy setters fail not to resort to artificial fertilisation, going over the bunches carefully with a camel's hair brush. All the large-berried varieties, such as Gros Colman, Gros Guillaume, &c., which are good setters, should be thinned while they are in flower, and with those that are liable to have very closely set berries it is a good plan to thin them before the flowers expand, as a practised eye can tell which flower buds by their vigour that are likely to set, and the removal of the weaker strengthens them wonderfully. Whilst the Vines are in flower do not pinch or stop the laterals, but when the blooms are fairly set remove the laterals at once, so as to prevent overcrowding.

Planting Growing Vines.—Those struck from eyes in February or March and grown on in pots or turves may from now to the early part of June be planted out, giving them a good soaking with water at 90° to 100°, mulching the surface with a couple of inches of short rather lumpy manure. A humid atmosphere should be maintained, and shade afforded from bright sun until they become established.

FIGS.—*Early Forced Trees in Pots.*—When the fruit has all been gathered remove the loose portion of previous mulchings, and supply well decomposed manure, which will encourage root action and assist the trees to perfect the second crop. If the trees have become infested with red spider or scale thoroughly cleanse them by means of soapy water and a soft brush or sponge, and ply the syringe freely twice a day. Although a second crop is serviceable a good first early crop is much more valuable; therefore be content with a moderate second crop, or none at all if the trees have been severely taxed by a heavy first crop, as they

must have vigour to give a full crop when early forced year after year; therefore give them a chance to recuperate, make and perfect growth with ample stored up matter for a full crop another season.

PLANT HOUSES.

Salvias.—These should be in a position where they can be hardened thoroughly for planting out by the end of the month in all localities that are free from late frosts. The tops of the shoots may be rooted, and these if stopped twice, once before planting out and once after, will make capital plants for placing in 6-inch pots in autumn.

Bouvardias.—Plants that have been fairly hardened may be planted out in frames of light moderately rich material. They lift well in autumn when one-third or more of the compost consists of rough leaf mould. If possible select for them a position exposed to the sun where the bottom is firm, so that they will be compelled to root in the compost given them. The frames can be kept closed for a time until the plants are well established, when they may be gradually hardened and the frame removed. If desirable to grow them in pots thoroughly harden them if forward enough, so that the pots can be plunged outside whenever the weather will permit of this being done. The shoots under both systems of culture should be pinched from time to time as they need it. When abundance of bloom is solely the object of the grower, the planting out system is the most economical method of culture that can be followed. They can be lifted with large balls of roots and placed on the bed of the house in which they are to flower without seriously checking them. Young plants now in 2 and 3-inch pots may be transferred at once into others 2 inches larger.

Solanums.—The earliest plants have commenced flowering; they should be placed in cold frames, where air can be liberally admitted. Plunge the pots to prevent the soil drying too quickly; if once the plants become dry at their roots the foliage will suffer, and if repeated many times it will have a sickly yellow instead of a dark green appearance. Syringing will not damage the flowers provided it is not done during damp dull weather, and it will assist in keeping the plants free from red spider. Pinch the shoots of young plants raised from cuttings, and place them when ready into 5 and 6-inch pots in a compost of loam, one-seventh of manure and sand.

Heliotropes.—Plants that are intended for standards should be placed into 6-inch pots. They will do well in the compost advised for Solanums, with the addition of a little leaf soil. Grow them for the present in an intermediate temperature, and remove all shoots that issue from the axils of the leaves until the necesssary length of stem has been attained. Then they will be ready for 10-inch pots, their flowering size. If sufficient cuttings have not been rooted of White Lady, the most useful light variety for winter flowering, they should be inserted at once. Directly they are rooted place them singly in 3-inch pots; and pinch the shoots from time to time. Do not grow the plants too warm after they are started in their first pots. Have the plants well hardened, so that by the time they are ready for 5 and 6-inch pots they can be plunged in a sunny place outside.

Mignonette.—Plants of tree varieties that are intended for standards and pyramids should be placed at once in 6-inch pots. Use a compost of good fibry loam two parts, one part of leaf mould, a liberal dash of sand may be added, and one-seventh of decayed manure. Place upright stakes to all the plants, whether intended for the former or the latter. For standards only one plant in each pot will be needed, from which all the lateral growths should be removed as they appear until the necessary length of stem has been produced. For pyramids have four plants in each pot, and the whole staked upright until they are placed in their flowering pots. The central one should have all laterals removed up to 6 or 7 inches high, when it may be allowed to branch, but the main leaders must be trained upright. The remaining three plants may have the laterals removed for several inches, but the distance entirely depends upon the width of the trellis at the base. At present they occupy an intermediate temperature, but artificial heat must be gradually dispensed with, so that by the end of the month they can be grown without any.

Roses.—Such Roses as Maréchal Niel, Gloire de Dijon, Reine Marie Henriette, and others of similar growth that have been in cold houses have ceased flowering. These must be pruned hard, so that strong young wood can be laid in for another year. If left as they are such plants soon become a crowded mass of small growths, and poor flowers only are the result. If fine flowers are needed strong growth must be encouraged, and this is largely assisted by hard pruning.

THE BEE-KEEPER.

NOTES ON BEES.

HOWEVER hopeful we were at the beginning of April that the month would be favourable and genial alike to bees and vegetation, we were sadly disappointed, as more wintry weather could hardly be experienced in this country. In the north on only four nights of the month did the temperature remain above 25° Fahrenheit, and only two above 32°. The whole month throughout was of a much lower temperature than that of January, and consequently the bees were little out; but when they did venture many were lost. Only on part of two days they carried natural pollen, and until the 5th of May there had not been a chance to resume. Every day there was more or less rain and snow, some of the showers being very destructive to fruit buds, and were accompanied by high winds, aggravating the damage. Feeding in many cases will have to be resorted to if bees are to be kept alive and in condition to gather honey should that time come during the summer of 1888. We do not remember such a cold spring since about 1842, when in that or the subsequent year a foot of snow fell on the 15th May, breaking the trees, destroying all fruit blossoms, and killing nearly every young bee in and out of the nest.

The effects of the protracted cold is prominently seen on the Snowdrops, not one seed pod being visible; and as the Crocuses never opened these also are likely to be destitute of seed too. Many other hardy plants have disappeared. My Auriculas, Primroses, and Polyanthuses have been almost destroyed, not from the cold alone, which, when unaccompanied by snow, seems to do them no harm, but whenever snow falls they are spoiled; even the hardy Arabis is cut down. Contrary to the generally received opinion that snow protects vegetation, it is and always has been the reverse with me, and your correspondent, Mr. W. J. Murphy, Clonmel, seems to be of the same opinion, with this difference, that the ill-effect with him is when sunshine occurs after snow. After snow my flowers are destroyed. For weeks this spring we never saw the sun, and although we had no deep snow still it was seldom absent, and has done its work.

THE EFFECTS OF THE WINTER ON BEES.

Owing to the long-continued cold the consumption of stores has been great and many hives have died, and owing to the mildness of January bees began to extend their brood more than is customary at that season, and queens that were older than six months, and perhaps unable now to keep up breeding through excess at the beginning, are deposed. Scarcely a post comes but brings a letter to that effect. I have in almost every case found this to be the case after inquiry. Young queens for stocks are the only guarantee we have for profitable hives during summer.

Although my plans and ideas have been condemned in no measured terms, it is a fact that the latter are approved. Even the "powerful screw" could not be dispensed with in the Raitt honey presser. Those who have unfortunately been led to adopt a presser different from the condemned Lanarkshire one will find there is no provision made in the Raitt honey presser to prevent the pollen being mixed with the honey, which spoils it. I now explain what I would have done long since, but for obvious reasons withheld. When honeycomb is not free from pollen, as is often the case, the comb ought not to be placed upon its edge, but into a wider cylinder and laid flat, the cylinder filled, and the pressure brought gradually upon the mass. Whenever the slightest particle of pollen is seen to make its escape, stop. This is most important, and bee-keepers should become impressed with the fact. If they wish to succeed they must present to the public honey unalloyed and free from all impurities, and keep to tried appliances.

BELLGLASSES AND FIXING FOUNDATION.

Although bee societies condemn bellglasses, and I do not approve of them, still bee-keepers, as a rule, derive pleasure from following out their own plans and contrivances, and many have a desire to see their bees at work in bellglasses, and to have the latter prettily filled for the table or for presentation. The difficulty of fixing the foundation or guides without sticks or smearing the glass with wax has hitherto been a barrier to bee-keepers. Foundation can be fixed to bellglasses, or glass for ornamental designs, without the beauty of the comb being spoiled by either sticks or wax. First cut narrow strips of paper and slightly gum on to outside of the glass the design wanted, then cut the foundation to proper lengths

and breadths, and fit exactly to the surface of the glass opposite the paper design. Now paint the edge of the foundation and the glass opposite the paper with strong gum, and steady foundation with blocks until it has set, when it may be placed in or on the hive. If properly done there will be no trace of anything to mar the beauty of the bellglass.

MY OWN APIARY.

Notwithstanding the backwardness of the season all my hives, by the aid of peameal and natural stores only, are in an advanced state, with one or two exceptions. I have not even disturbed a single covering nor fed any bees. All manipulations during winter and spring after October should be dispensed with, except in cases where either foul brood or a queenless stock is suspected. Stimulating by feeding does more harm than good, spreading brood the same, and the systematic practice of breaking sealed honey is but a waste of both it and bee life. Any of these manipulations are unnecessary. We put our bees in the autumn with a sufficient supply of natural gathered honey, and in as many cases as we possibly can with large stores of pollen. We have yet to see a pollen-bound hive, but our hives are of size consistent with rational bee-keeping, and the ventilating floors keep our bees and combs dry, and the former healthy and hardy. The entrances to our hives are kept narrow during the winter and spring, and I am now waiting patiently, if not anxiously, for sunshine to give more doorway to my populous hives, the result of my recorded management in this the most untoward season for bees.

CORRESPONDENCE.

Amongst the many letters I am receiving the following one from the north and the other from the south of Scotland will, perhaps, be interesting to your readers, and goes to verify the foregoing. "J. C. T." says :—"For my own part you know I am no trader, simply an enthusiast, but like most bee-keepers, started on wrong lines and have suffered much loss thereby. If I must again start anew I would much like to make sure of a hive which has stood the test of a practical bee-keeper, so that I would not have to change again." "W. H. C. D." says, "The one half of my hives I had fitted with ventilating floors have stood the winter well, being perfectly dry, the bees well preserved and healthy. The other half are not so satisfactory ; the floors are damp and the combs mouldy, and many of the bees are dead. I will, the first opportunity, have them all altered to your pattern."

This is simply the hive I have described previously, which I have used with but slight alterations for forty years, which has been long known as the square Stewarton and Lanarkshire hive, but now claimed by novices.—A Lanarkshire Bee-keeper.

TO CORRESPONDENTS

*** All correspondence should be directed either to "The Editor" or to "The Publisher." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Painting Peach House (*W. H. M.*).—We consider it most imprudent to paint a Peach house inside when the trees are in flower, and should not expect a good crop of fruit after the process.

Greenhouse Rhododendrons (*C. H. B.*).—A selection of varieties and cultural notes were given in this Journal, page 564, December 29th, 1887.

Cinerarias (*G. H.*).—The blooms are fine, one especially so. The fasciated stem is curious, and it may be worth trying to preserve both by suckers and seeds.

Lilium candidum Diseased (*J. C.*).—The disease is caused by a fungus (Peronospora), concerning which we hope to publish some particulars shortly, as similar examples were recently submitted to the Royal Horticultural Society's Scientific Committee for examination. The course you propose to adopt is the best under the circumstances.

Hardy Liliums (*An Old Subscriber*).—The following do well with us outdoors :—L. candidum, L. croceum, L. longiflorum Harrisi, L. tigrinum splendens, L. auratum, English-grown bulbs being planted, and L. lancifolium or speciosum varieties. If more are wanted add L. chalcedonicum, L. testaceum, L. Humboldti, L. superbum, L. colchicum, L. Thunbergianum , and L. umbellatum fulgidum.

Peaches not Setting (*R. C. W.*).—Many blossoms have failed to set on trees grown against walls in the open air this spring, chiefly, no doubt, in consequence of frosts accompanied by cold easterly winds being prevalent during the blossoming period. Netting and similar light coverings do not, nor cannot, ensure good crops of fruit in all seasons and districts, but are serviceable during the majority of seasons, and often effectual.

Dandelions on Lawns (*F. B. Taunton*).—We know of no better plan than the one that has been many times mentioned of dropping sulphuric acid exactly into the centres of the plants. It is usually kept in a stone blacking bottle, with wire round for carrying it, a stick with several notches cut in it an inch upwards from the end being plunged in for drawing out the liquid and applying to the weeds. It is quite useless if not placed full in the hearts of the plants, but one or two drops there burn down into the roots. The acid must not touch the hands, clothes, or boots, nor should the stick be rubbed on the grass, or brown unsightly marks will be left on the lawn. A handy workman soon becomes expert in the use of the acid. We have seen boys do more harm than good with it, and the work is not suitable for women.

Fig Trees Casting Fruit (*A Subscriber*).—The chief cause of Figs shedding their fruit is imperfect or non-impregnation, and arises from the trees not having a sufficiency of sun and air, the growths not being fully exposed to light so as to thoroughly solidify the growth as it is made, too high a temperature in the early stages of forcing, and an uncertain supply of water at the roots. With properly constructed borders Fig trees can hardly be overwatered after the fruit commences swelling until it changes for ripening. The fruit sent presents the appearance of being scorched at the apex, probably a consequence of the sun acting powerfully upon it whilst wet, air not being given sufficiently early to dissipate the moisture proportionately with the advancing temperature. It, however, was not fertilised, hence its falling.

Strawberries Dying—Peach Scalded (*F. G.*).—The Strawberries appear to be two or more years old—that is, offsets from old plants seem to have been potted, instead of runners having been rooted for growing into healthy young plants. Offsets from an enfeebled stock often collapse when the crop is advancing, the strain on the plants being too great for them to endure. Secure runners from young and healthy, not from old and semi-exhausted plants, and with good cultural attention they will not fail. There is nothing in your letter to enable us to form any definite opinion on the apparent scalding of the Peach. You do not say whether it was exposed or shaded, nor detail your practice as to syringing, temperature, and ventilation. It appears to be the Amsden, an American variety, and is perhaps superseded by the Alexander.

Roses under Glass (*S. S.*).—If you read Mr. W. Bardney's article on page 379 last week, you will observe that he advises portable roof lights or sashes, in order that they can be removed for ripening the wood, and inducing early and complete rest, when blooms are required in the winter or early spring; and there are few, if any, cultivators more entitled to be listened to on the subject, for we have seen Roses in his charge flowering as freely at Christmas and onward through the winter as at any time during the whole year. But Maréchal Niel is not grown for winter, but rather for spring flowering. When you ask whether "it is necessary to have the sashes removable, or whether ample top and bottom ventilation would be all that is needful;" our reply is that we have seen equally good results under both systems. When we see as fine blooms as are sent into Covent Garden in April cut from plants under a fixed roof, the grower of them would not deem moveable sashes "necessary," though another grower who removes the sashes in the autumn and has similarly fine blooms might think his plan the better. It is thus a question of management. More Maréchal Niel Roses are probably cut from under fixed roofs than in houses from which the sashes are removed for a time. With the sashes portable you have a choice in the matter, as you can take them off or leave them on as you wish ; but such a roof is more costly than a fixed one, and the Maréchal Niels referred to on the page quoted last week as being so well grown by Mr. E. Trollope were grown under a fixed roof. As the question then resolves itself into one of outlay and individual aptitude no one can be expected to settle the matter so well as yourself. As to shading, unless the glass is very inferior, and Roses are in good soil and under good management, they do not require to be shaded by covering the glass with anything at any period of the year.

Various (*J. E.*).—We have seen excellent beds of double Petunias, and on the other hand many that were not satisfactory. Much depends on the varieties that are grown and the weather. During a wet and generally cold summer double Petunias are seldom effective in beds, even in the south of England, or in Wales, where you reside. Last summer the plants flowered remarkably well in beds; but for massing, the single varieties are, as a rule, much more effective than the doubles, and exuberant growth is checked and floriferous induced by plunging the pots an inch or two over their rims in the beds, instead of removing them and planting in the usual way. The soil in the pots must not be dry when the plunging is done. Stout plants 3 or 4 inches through may be inserted about a foot apart. Marvel of Peru is not suitable for ordinary bedding purposes, though a mass may perhaps suit you. The flowers close in the daytime, except in dull weather, opening towards evening, and then diffusing a honey-like fragrance. The plants vary in height according to age, soil, and season, but generally attain a height of 2 feet, though we have had many bushes upwards of 3 feet high and the same in diameter. The tubers may be preserved from year to year. We have seen some nearly a foot in diameter. If your plants are seedlings, and you require to grow them in a mass, they may be planted 15 or 18 inches asunder. Zinnias grown in good soil and a warm position make brilliant beds. There is no better way of raising and planting them than you may find described on page 79 of our issue of February 2nd of the present year. Strong plants, similar to those there referred to, may be planted 9 inches apart. Smaller, such as we often see by less intelligent preparation, may be planted more closely, thinning them afterwards if needed. The Auricula sent is "peculiar" in colour, but not in being "unshaded as a self," because true selfs are not shaded, but many Alpines are.

Evaporation from Heavy Soil (*W. R. R.*).—The advice given in the book from which you quote is sound, as drainage and a loose ameliorated surface are the principal means by which heavy soil is made available in the highest degree for cultural purposes. Drainage by ridding the soil of water within 3 feet of the surface renders it drier, therefore warmer, which is demonstrated by grass land during a thaw, the surface immediately over the drains is freed of snow or "white frost" much sooner than in the spaces between the drains; in fact, the grass now (May 10th) over the drains a full yard wide is double the height of that on the intervening surface. The drains by carrying off superfluous water from the soil draw in, so to say, a corresponding quantity of air, which causes the water retained to be more divisible, hence sooner warmed. The air entering is particularly valuable as a direct source of fertility, and peculiarly so as supplying nitric acid for attacking stubborn substances, hastening the decomposition of vegetable and animal matter, making it sooner and in large proportion available as plant food. Decomposition means heat; stagnation, cold. It is an old and true saying that grass does not grow as it ought because the ground is "cold and wet," or, in other words, the grass does not grow because the soil is cold, and it is cold because wet. Evaporation only intensifies the effect of the cold temporarily, therefore is to be taken into consideration relatively with the condition of the soil and time of year, as evaporation from an undrained soil is different in effect to that taking place from soil efficiently drained. Evaporation means abstracting moisture and supplying its place by air, which at the time of year when cultural operations are practised is warmer than the water displaced; comcomitantly soil deprived of water by evaporation is made drier and warmer because more absorbent of heat from the atmosphere. Evaporation from an undrained soil will tend to make the surface colder during the process, but no soil is in a fit state for cultivation that is allowed to contain stagnant water within 3 feet of the surface. Preventing evaporation or the escape of moisture with the heat absorbed by means of a mulch or covering of non-conducting material when required, is very different from preventing it by a close surface at all times of the year. Drainage on a heavy soil counteracts the tendency to a lower temperatnre by evaporation in summer. Throwing up the soil roughly in winter prevents its getting sodden, allows the water to pass more quickly to the drains, and the larger surface exposed admits of more rapid evaporation and subsequent absorption of heat. A loose surface of ameliorated soil is also the most efficient agent except mulching in resisting drought—that is, conserving moisture in the soil when needed in summer, because without the loose surface the soil would bake and crack, forming miniature chasms and larger rents through which the moisture escapes. A hard close surface is the great evil of heavy soil; it holds more water in the close state than in the loose, and its absorbing and retentive power both as regards heat and moisture are in proportionate ratio to its divisibility and porosity, and its wealth for cultural purposes is proportionate to its depth of ameliorated soil and the food assimilated therein.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*J. W. G.*).—A double variety of Narcissus incomparabilis known as "Butter and Eggs." (*S. K.*).—A fine variety of Cattleya Mossiæ. (*S. P. E. S.*).—The Narcissus is the double variety incomparabilis, known as Eggs and Bacon. It is totally different from N. capax. (*J. W.*).—Saxifraga oppositifolia and Sempervivum arboreum. It is not a Sedum. (*T. W.*).—Send us a specimen, and we will endeavour to give you its name. (*J. C.*).—No numbers were attached to your specimens, the names cannot therefore be clearly indicated. The red flower is Kennedya rubicunda, the white one Leptospermum scoparium. The Daffodil is a double Narcissus incomparabilis.

Stewarton Hive (*A. R. C.*).—The Stewarton hive, octagon or square form, can be had from Messrs. George Neighbour & Sons 149, Regent Street, London, whose advertisement appears in this Journal, and practical modes of management for these hives at all times are given in these columns. The Stewarton system is now recognised by all bee-keepers of note as the best.

Separators (*J. G.*).—In crates of sections. It is quite unnecessary to have pieces of wood, tin, or glass between sections. They obstruct the bees, reducing greatly the harvest of honey. They are meant to give flatness to the surface of the comb, but when managed properly the end is attained without them, to the great advantage of the bee-keeper, especially that of profit.

Bees Leaving their Hive (*Inquirer*).—In the absence of fuller information as to the whole history of the bees from the beginning, we can only conjecture what has been the cause of the bees leaving their hives, there being so many causes; but the one most probable is the queens were old ones and had been superseded by young ones last autumn, which had in all probability either missed fertilisation or had been lost when out for wedding purposes. Another cause which induces bees to leave their hive during the early spring is, if the hive has been kept too cold, to keep the bees in a normal state, a sudden warm blink of the sun rouses them into activity, and, becoming excited, they leave the hive. There are other causes, but not knowing all the facts we cannot give particulars.

COVENT GARDEN MARKET.—MAY 16TH.

GOOD supplies of all classes of fruit to hand. Vegetables of all kinds short, with the exception of Asparagus, which owing to the heavy consignments from the Continent is hardly cleared at low rates.

FRUIT.

	e. d.	e. d.		e. d.	s. d.
Apples, ½ sieve	2 6	to 4 6	Oranges, per 100	4 0	to 9 0
Nova Scotia and Canada barrel	10 0	18 0	Peaches, dozen	12 0	20 0
Cobe, 100 lbs.	45 0	0 0	Peare, dozen	0 0	0 0
Grapes, per lb.	3 6	5 0	St. Michael Pines, each	3 0	5 0
Lemons, case	10 0	15 0	Strawberries, per lb.	2 0	6 0

VEGETABLES.

	s. d.	e. d.		e. d.	s. d.
Artichokes, dozen	1 0	to 2 0	Lettuce, dozen	0 9	to 1 3
Asparagus, bundle	1 0	4 0	Mushrooms, punnet	0 6	1 0
Beane, Kidney, per lb.	1 6	0 0	Mustard and Crese, punt.	0 2	0 0
Beet, Red, dozen	1 0	2 0	Onions, bunch	0 3	0 0
Broccoli, bundle	0 0	0 0	Parsley, dozen bunches	2 0	3 0
Brussels Sprouts, ½ sieve	0 0	0 0	Parsnips, dozen	1 0	0 0
Cabbage, dozen	1 6	0 0	Potatoes, per cwt.	4 0	5 0
Capsicums, per 100	1 6	2 0	,, Kidney, per cwt.	4 0	0 0
Carrots, bunch	0 4	0 0	Rhubarb, bundle	0 2	0 0
Cauliflowers, dozen	3 0	4 0	Salsafy, bundle	1 0	1 6
Celery, bundle	1 6	2 0	Scorzonera, bundle	1 6	0 0
Coleworts, doz. bunches	2 0	4 0	Seakale, basket	0 9	1 0
Cucumbers, each	0 4	0 7	Shallots, per lb.	0 3	0 0
Endive, dozen	1 0	2 0	Spinach, bushel	1 6	2 0
Herbs, bunch	0 2	0 0	Tomatoes, per lb.	1 6	2 0
Leeks, bunch	0 3	0 4	Turnips, bunch	0 4	0 0

PLANTS IN POTS.

	s. d.	e. d.		e. d.	s. d.
Aralia Sieboldi, dozen	6 0	to 12 0	Ficus elastica, each	1 6	to 7 0
Arbor vitæ (golden) dozen	12 0	24 0	Foliage Plants, var., each	2 0	10 0
Arum Lilies, dozen	6 0	12 0	Fuchsia, dozen pots	6 0	12 0
Azalea, dozen	0 0	0 0	Genista, per dozen	6 0	12 0
Cineraria, dozen	6 0	10 0	Heliotrope, dozen pots	6 0	9 0
Coleus, dozen	4 0	6 0	Hydrangea, dozen	9 0	18 0
Cyclamen, dozen	12 0	18 0	Lilies Valley, dozen	12 0	18 0
Dielytra, per dozen	12 0	18 0	Lilium Harrisii, doz. pots	30 0	42 0
Deutzia, per dozen	6 0	9 0	Marguerite Daisy, dozen	9 0	12 0
Dracæna terminalis, doz.	30 0	60 0	Musk, dozen pots	2 0	4 0
,, viridis, dozen	12 0	24 0	Myrtles, dozen	6 0	12 0
Erica, various, dozen	9 0	18 0	Palms, in var., each	2 6	21 0
,, ventricosa	18 0	24 0	Pelargoniums, dozen	6 0	18 0
Euonymus, in var., dozen	6 0	18 0	,, scarlet, doz.	4 0	6 0
Evergreens, in var., dozen	6 0	24 0	Poinsettia, dozen	0 0	0 0
Ferns, in variety, dozen	4 0	18 0	Spirea japonica, doz.	6 0	12 0

CUT FLOWERS.

	e. d.	e d.		s. d.	s. d.
Abutilone, 12 bunches	2 0	to 4 0	Lily of the Valley, 12 sprays	0 6	to 1 0
Anemone (Fulgens), 12 bunches	3 0	6 0	Mignonette, 12 bunches	3 0	6 0
Anemones 12 bunches	1 6	4 0	Narciss, various, 12 bche	2 0	4 0
Arum Lilies, 12 blooms	2 0	4 0	Pansies, 12 bchs	1 0	2 0
Azalea, 12 sprays	0 6	1 0	Pelargoniums, 12 trusses	0 6	1 0
Bouvardias, bunch	0 6	1 0	,, scarlet, 12 trueses	0 4	0 6
Camellias, 12 blooms	1 0	3 0	Polyanthus, 12 bchs	1 0	3 0
Carnations, 12 blooms	1 0	3 0	Primroses, 12 bunches	0 6	1 0
Cowslips, 12 bunches	1 0	2 6	,, (double), bunch	0 9	1 6
Cyclamen, 12 blooms	0 4	0 6	Rosee, Red, 12 blooms	2 0	6 0
Daffodils, Double, 12 bchs	1 0	2 0	,, (indoor), dozen	0 6	1 6
,, Single, 12 bchs	1 0	3 0	,, Tea, dozen	1 0	2 6
Daisies, 12 bunches	2 0	4 0	red, dozen (French)	0 0	0 0
Epipbyllum, 12 bloome	0 0	0 0	,, yellow	2 0	4 0
Encharis, dozen	2 0	4 0	Spiræa, bunch	0 6	1 0
Gardenias, 12 bloome	1 6	4 0	Stepbanotis, 12 sprays	3 0	4 0
Hyacinthe, French, 12 bunches	12 0	15 0	Tropæolum, 12 bunches	1 6	2 0
,, (Dutch), box	1 6	4 0	Tuberoses, 12 blooms	0 9	1 0
Lapageria, coloured, 12 blooms	1 0	1 6	Tulips, dozen blooms	0 3	0 6
Lilium longiflorum, 12 blooms	2 0	4 0	Violets, 12 bunches	0 4	0 9
Margnerites, 12 bunches	2 0	6 0	,, (French), bunch	1 0	2 0
			,, (Parme), bunch	0 0	0 0
			Wallflowers, 12 bchs	2 0	4 0
			White Lilac, per bunch	5 0	6 6



PRECISION IN FARMING PRACTICE.

If we required proof of the existence of a desire for improvement, and a lively apprehension that improvement in practice is possible among farmers, we have certainly had it during the last few months, for never before have we had so many applicants for advice about cropping and the selection and application of manure to farm crops. We have done the best we could for all our clients, and if our advice is accepted and acted upon in a literal sense it cannot fail to induce better practice and a proportionate improvement in results; for we have invariably insisted upon the primary importance of thorough drainage, cleanliness, and mechanical division, in order that the crop for which manure is used may derive full benefit from it. In addition to this we also require exact distribution of manure, and when chemical manure is used it cannot be applied with precision by hand, and the use of an implement is absolutely necessary. No implement which we have tried for this purpose is equal to the Excelsior drill. The quantity can be regulated to a nicety. It is drilled with seed just as regularly as the seed itself, or it is applied as a surface dressing alone by removing the coulters with a degree of precision that is perfectly delightful in comparison with the slovenly work done by hand. For example, if manure, consisting of a mixture of nitrate of soda, muriate of potash, steamed bone flour, and mineral superphosphate is sown by hand upon pasture, the heavy particles of soda and potash fall within a space only a few feet wide along the track of the sower, but the bone flour and superphosphate is carried some distance off by the slightest puff of wind. We have seen evidence of this repeatedly, and came upon a glaring example a few days ago upon some permanent pasture, where the grass along each track of the sower was of a deep green hue and robust growth, the intermediate spaces being of a comparatively weak growth and light colour. This difference arises from the speedy action of the nitrogenous manures, of which the greater portion of the surface was practically free. Sown by the drill this can never happen, for the manure is distributed evenly over the entire surface.

Frequently are we asked for a formula of the most suitable manure for certain crops. We always give it, but we are free to own that more or less than we recommend might probably be used with advantage. How are we to know this without that intimate knowledge of the condition of the soil to be treated, which the manager of each farm ought, but which he so frequently does not possess? Soil and seasons both exercise an influence for good or evil upon results. Knowing this as we do so well, how can we venture to give precise formulæ for general guidance? Science has been defined as precise or systematic knowledge, but in relation to agriculture it is best regarded as precision in degree. By all means let us strive for the possession of accuracy in every detail of farming, but do not let us forget how greatly results are influenced by atmospheric as well as soil peculiarities. If only we come to accord due weight to such natural influences, we shall not strive for unnecessary accuracy of weight and measure. It was for this reason, or rather this was one of our reasons for recently calling attention to the important fact that there is a residue in the soil of the fertility imparted by chemical manures after the crop of the year is harvested. It is true there may be some loss of nitrates from this residue in a wet winter, especially from light soils, and this must be taken into account in spring when calculations are made of the quantities of different manures required for the season. No doubt the marvellous results obtained by Mr. Cook at Flitcham Abbey by the use of muriate of potash for Barley has induced very many farmers to try it, and has led to much disappointment. Yet good has undoubtedly been done, by showing how the want of enough potash, phosphorus, or nitrogen in the soil may prevent a full development of a crop.

Precision, then, in farming practice is best regarded as a relative term. Let us take care that it leads us to avoid all shams either in manures or seeds, that we use pure manures and pure seeds, that our practice all round is sound. We may be asked, Of what use, then, are the reports of agricultural experiments? We reply, They are invaluable if taken as guides to practice, provided there is no blind following of any of them. If a farmer would excel in the practice of his calling he must bring intelligence and common sense to bear upon it, and must prove for himself what or which are the best sorts and methods of manures and their application to the soil. But we may insist upon close accuracy in the preparation of the soil for the reception of manure and seed. Drainage, either natural or artificial, there *must* be; mechanical division of the particles of the soil there *must* be; weeds also *must* be kept down. Do these three simple primary conditions to precision in farming practice receive the attention they merit? If any of our readers had been with us on the day we write this article, when we walked over three farms of an aggregate area of nearly a thousand acres, they would have had ample evidence that they do not.

WORK ON THE HOME FARM.

Corn-hoeing still continues being done as briskly as possible, and we have had to urge the men doing this upon Wheat to greater exertion, for it has grown so fast that we feared the hoeing might not be finished before the Wheat became too high for such work. Rapidity of growth has been most remarkable where the top-dressing of chemical manures was given early in showery weather. We fully intended using the Excelsior drill for this work over the Wheat, but finding the soil too wet and soft for horses to go upon it hand-sowing had to be resorted to. We mention this as showing how no inflexible rule can be laid down for general practice. Farmers more than any class are subject in their work to conditions of weather, and when these prove adverse we have to make the best of them. We have seen reports in daily papers that the Wheat plant is backward in growth, and therefore a short crop was inevitable. Seeing as we do frequently much of the great corn-growing district of East Anglia, we cannot agree with this statement. Some Wheat is undoubtedly backward, but very much more is fairly forward. Thistles, Docks, Coltsfoot, Charlock, and Couch Grass have we among corn sown upon land taken in hand last Michaelmas, and we have every horse and man we can spare at work upon them, for never was the weather more favourable for the destruction of weeds, and true economy prompts the employment of all available labour power now to destroy these robbers of the fertility of the soil.

Since the weather has become more favourable to the promotion of free growth in grass and other green crops, the price of sheep has advanced so much that we have known a profit of 10s. per head made upon hoggets purchased only a fortnight ago. Upon one of our farms we have decided to fold sheep upon a weak Clover layer, which would not afford a full crop for hay, and by folding we may obtain a better second crop either for stover or seed. We have finished folding upon Rye, which is now left for a second growth for harvest, as we do not require the land for roots; had we done so it would have come admirably to hand for such a purpose, after being so well manured by the flock in folds. A full crop of Rye seed and straw is not unprofitable, and it always meets with a ready sale.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				
1888. May.	Barometer at 32° and Sea Level.	Hygrometer. Dry.	Hygrometer. Wet.	Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature. Max.	Shade Temperature. Min.	Radiation Temperature. In sun.	Radiation Temperature. On grass	Rain
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 6	30.343	54.3	48.2	S.W.	48.0	59.8	41.9	85.5	36.4	—
Monday..... 7	30.387	58.9	54.7	W.	48.8	69.7	51.2	114.1	47.0	—
Tuesday 8	30.213	60.9	55.7	S.W.	51.0	68.9	50.0	115.7	44.7	—
Wednesday.. 9	29.953	50.7	42.4	N.	51.9	60.2	41.3	109.3	35.5	—
Thursday.... 10	30.491	48.4	41.3	N.E.	51.9	58.2	42.7	102.3	34.7	—
Friday 11	30.491	48.7	42.5	N.E.	51.2	64.6	35.3	105.5	29.3	—
Saturday 12	30.435	51.5	44.3	E.	51.0	67.2	37.3	103.2	32.4	—
	30.365	53.3	47.0		50.5	63.5	43.0	105.5	37.7	—

REMARKS.

6th.—Fine, but with very little sunshine.
7th.—Cloudy till 11 A.M., bright and warm after.
8th.—Generally cloudy except for an hour or two at mid-day, and rather close.
9th.—Bright, fresh and cool.
10th.—Cloudy early, gradually clearing, and bright in afternoon and evening.
11th.—Bright and fresh.
12th.—Bright and warm.

A week of fine spring weather, temperature just the average. Grass frost on the 11th.—G. J. SYMONS.

WAYS AND MEANS.

WE have the satisfaction of knowing that our observations published last week, entirely in the interests of the Royal Horticultural Society, were not wholly fruitless. The requisite details as to the probable nature and extent of the Exhibition then in preparation in the Temple Gardens, with the prices of admission, were precisely what some of our readers desired to know, and the information reached them just in time for attending the Show. We have, moreover, reason to believe that some of them will shortly become Fellows of the Society, while others prefer to wait the issue of events. There is a very large number of persons, and perhaps a very large majority, deeply interested in horticultural pursuits, who cannot bring themselves to believe that showing should be the chief object of a horticultural society. They rather regard such gatherings as means to an end—gaining public countenance and wider support, that may be applied in some practical and useful manner in furtheranee of the greater and ultimate object—improved and extended cultivation of plants and crops; encouragement in the production of new varieties by art and by enterprise; testing them and estimating their merits, then disseminating the information for the public benefit. That is the ideal entertained by many, and in all probability an increasing number, of what a horticultural society should be, more especially one established on a Royal, which of course means a national basis in this country, because charters are only granted to institutions that are founded for the public good. We not only believe such an ideal to be excellent, but capable of embodiment as an actual fact. It is not a sentimental notion, but a practical proposition, and it only remains to ascertain the best methods for carrying it into effect.

All the efforts made in the interest of the Royal Horticultural Society, including shows, small and large, and all the expenditure incurred in the transaction of business, are in accordance with the eventual object indicated. This has been clearly stated in our columns by a member of the Council of the Society and of the advising Committee, who said that all the arrangements for holding shows periodically were made for obtaining support, by which the gardens at Chiswick could be better maintained, and horticulture in its widest and most important aspects represented for national purposes. That view of presenting the case not having been, so far as we know, opposed, the principle may be admitted, and there only arises the question of methods. This is essentially, and most properly, debatable, and has in fact been publicly debated by members of the Council and Committee, and views expressed thereon. If there were no divergence of views there could be nothing to discuss; but such a millennium has not arrived in conducting the affairs of this or scarcely any other Society. There are majorities and minorities in every corporation of individuals working for a common object, even in the closest of cabinets, and the majority rule, though many an example has shown that the minority was sometimes right. The Council of the Royal Horticultural Society is not a secret conclave. It used to be considered so, and press and private lectures have on no subject been so frequent as on the unwisdom, to employ a mild term, of the directorate not taking the public into its confidence. Whether desirable or not, and we pass no opinion on the matter at this moment, the days of cabinet secrecy passed with the appointment of the advising Committee, for there is a commingling of members of the two bodies, and matters that are to be brought before the Council are discussed with persons other than members of those bodies. Whether the Society will be much stronger at the end of the year, and in a better position for doing horticultural work on the lines acknowledged as correct, than it was at the beginning, of necessity remains to be proved. Our strong hope is that it will be, and we shall rejoice in the opportunity of giving credit to whomsoever it may be due for the good work done and the satisfactory results achieved.

The number of Fellows enrolled during the past few months is highly gratifying and very encouraging. The zeal exercised on behalf of the Society by friends on the Council and Committees, and not less so by the officials, has borne good fruit, and as there is no fear of a cessation of endeavour, the numbers may be expected to go on increasing. Many have joined, not with the object of having their money expended on shows and for distributing among professional showmen richer than themselves, but for raising a strong fund for the Society to be expended for conducting substantial work in the common interest of all. It is due to Fellows holding those views, also to a noble few exhibitors and supporters who have staged their products without expecting pecuniary reward, and who have done much more than that, to state that the guineas of gardeners are not expended in the form of prizes at shows they cannot see. It is fortunate the Society has such excellent supporters and nothing but good can result through letting the public know it. The secret of success rests in a sound system of finance. This does not consist in miserly hoarding, but in investments that as far as human foresight avails, and experience warrants, shall be remunerative. Nor does it follow that an effort must be adjudged a failure if it does not directly and immediately bring profit. Seed has to be bought and some expenditure incurred in tillage before the harvest can be reaped; but scatter good seed on good ground and a satisfactory return may in due time be expected.

The Exhibition of last week was a sowing of seed, good seed, in fresh ground and promising. What the immediate result of the Show may be we do not at present know. A financial balance in favour of the Society could not be expected under the circumstances, and if there should be a near approach in that direction it would be encouraging. The locality was most favourable for attracting the affluent to see what is being done in the work of cultivation, and it was pleasing, indeed almost surprising, to find such a large attendance, including many persons of distinction, on an unmistakeably rainy day. Moreover, the visitors as a body were new to the shows of the Society, which is a great point gained. They were not seen at either the Kensington or Westminster Shows, where faces were and are so familiar and fresh visitors the reverse of numerous. During the course of years thousands of persons in the aggregate have no doubt attended the scores of minor shows that have been provided at short intervals, and have not been impressed sufficiently for speaking of them with enthusiasm and arousing an interest in the work of the Society amongst their friends. The public come to a show under the auspices of the Royal Horticultural Society with great expectations. These would be realised last week, and visitors, of which the Baroness Burdett Coutts is an example, are so satisfied that they urge others to go also and to support the Society. One exhibition of a commanding nature, and in a favourable position, is calculated to be of greater service to the Society than a score of small gatherings, the nature of which the public do not understand and may misapprehend. Periodical meetings of horticulturists for the examination of new, rare, and special products are most important, and records of them interest the whole of the horticultural community and keep the work of the Society before the world; but exhibitions for the public must nowadays be of considerable magnitude to attract attention. Nurserymen appear to be fully cognisant of this, and take care that when the public are

specially invited to their home displays that they do not go away disappointed.

If an exhibition like that of last week can be provided so quickly and such a good attendance be secured on rainy days, what may be expected if exhibitors have long notice to prepare for an event made widely known, and which may be fortunately held when the weather is as propitious as it was on this occasion uninviting?

Since the foregoing was in type we have received the following information :—"At the meeting of the Society held on Tuesday, the Council received a short statement in regard to the result of the Temple Show, and thought that it was eminently satisfactory, bearing in mind the extremely bad weather which prevailed on the first day, and which prevented so many visiting it. Sir Trevor Lawrence, the President, read letters from Sir Henry Ponsonby regretting that Her Majesty had been unable to attend, and also from Sir Francis Knollys that the Prince and Princess of Wales would have had much pleasure in attending if they had not had previous engagements. A letter of thanks was ordered to be sent to each of the Judges." We are also informed that eighty-two candidates were proposed and unanimously elected Fellows of the Society.

FORCED STRAWBERRIES—HOW TO PREVENT BARREN PLANTS.

According to the information given by "T. J." (page 405) in reference to his plants proving barren, the first mistake that he appears to have made was relying on two and four-year-old plantations for runners. Plants so raised lack that vigour which is necessary to the production of strong bold well-ripened crowns early in the season. The energies of the fruiting plants are divided between the production of fruit and runners, the former having the first claim. Early runners produced by old plants at the flowering stage are quickly brought to a standstill as soon as the fruit commences swelling, seldom making any progress afterwards until the crop has been removed and heavy rains start the plants again into activity. The result is that plants raised from these late runners have the growth to make at the time of year when it should have been made. From all the varieties named, except Vicomtesse Hericart de Thury, I should expect a very large per-centage of barren plants when subjected to such treatment. But this variety, if true, seldom fails to fruit, even if the plants are small, but the crowns matured, this being indispensable. If "T. J." provide a young plantation from fruitful plants, prepared by layering in small pots or by cutting off the runners and starting them in a frame, and when well rooted planting them out 1 foot apart in rows 18 inches asunder during the month of August, so that they would be well established before winter, he would have a plantation from which he would secure luxuriant runners for layering early in the season. The only attention after planting is to keep the ground free from weeds, make the plants firm in February, if lifted by frost, and then mulch the ground. If the soil is light and dry previous to the flowers appearing (which should be removed as soon as they are sufficiently developed) a good soaking of water may be given, or liquid manure in a weak state if the ground was not very fertile at planting time. A plantation of this description will produce runners, which if pegged on the surface of 5½ and 6-inch pots, according to the variety and the time they are required for forcing, will make strong well-rooted plants by the time runners would be ready for layering from old fruit-bearing plants. It must be kept in mind that two or three weeks' growth in the early part of the season is of infinitely more value than thrice the length of time in autumn. Runners that have their constitution impaired through being brought to a standstill by the strain of fruit-bearing to which their parents are subjected, recruit themselves in good soil when carefully and liberally watered and syringed; but this is accomplished too late in the season, for the result is, that they are in full growth when frost brings them to a standstill, when half their season's work has not been accomplished. Such plants, with few exceptions, are certain to prove barren, and even those that do fruit I have not a shadow of a doubt produce only weak flower stems.

This evil has been aggravated by a too rich material for potting that appears to have been used, as well as over-feeding. Would your correspondent in making a plantation outside go to the labour, trouble, and expense of adding one-third of manure to the soil as necessary for the growth and fruitfulness of the plants. Such a quantity of manure even on the poor land would do more harm than good. What would it do outside but produce luxuriant growth at the expense of fruitfulness? The same effect would take place under pot culture in even a more marked degree, for being constantly provided with water the plants would be stimulated to grow faster and longer even than those outside. If I had rich soil from an old pasture that had been recently stacked I should hesitate to use any manure. But under any circumstances with good ordinary loam an addition of one-seventh of manure is ample. If the soil is inclined to be heavy a little coarse sand might be added, and the manure would consist of horse droppings passed through a half-inch sieve. The droppings would be sweetened by frequent turnings, the same as would be necessary in preparing them for making a Mushroom bed. If the soil were light cow manure would be preferred. A little soot sprinkled over the drainage would be beneficial to the plants and assist in keeping out worms while the pots were standing on the border. Feeding, with soil of this nature should not give much trouble, and stimulants should only be applied when the plants have made a fair amount of roots and are in vigorous growth. This should not be persisted in too late in the season or the growth would not be ripened, and thus all previous care and attention would be wasted. One or two dressings of artificial manure applied tothe plants are all that are really needed. We seldom give more than one application, for if the soil is crammed firmly into the pots they should contain ample food for the plants until they are top-dressed ready for forcing.

Another source of failure may be due to the heat and moisture to which the plants are subjected. Moisture three or more times a day, if I am to infer that is syringing and watering, with a temperature of 60° to 70°, is alone sufficient to cause the best and most matured crowns that can be produced to prove barren. Under any circumstances the Strawberry must be started gently. Especially is this necessary when the crowns have not been well ripened. Hurry them, and apply a super-abundance of moisture, and leaves, "nothing but leaves," will be the reward. At first a cool structure only is needed for two or three weeks, then the temperature should not exceed 50°, with a little air daily until the plants show signs of movement, when it may be gradually increased to 55°, but not before the flowers are visible, and a higher temperature is not needed before they are set. It can then be gradually increased to 60° or even 70°. To move the plants from a temperature of 55° to near 70° is too sudden a change, and may alone be the means of small instead of large fruit.

The atmosphere should not be too moist nor too close before the fruit is set. The syringe may be used once or twice daily according to the weather. Early in the season once will be sufficient, but when the sun increases in power it may be done twice. The plants should be carefully watered at their roots, never allowing them to become dry, but, on the other hand, they should not be saturated. Early in the season they would not need water applied to the pots even daily. Later it might be needed once a day, and at this season of the year in all probability twice. At this period of the year the plants are better a good distance from the glass where the foliage can partially protect the fruit from the burning rays of the sun the same as they are in a natural state. Early in the season the exposure of the fruit to the feeble rays of the sun is a decided advantage, for a few sunny days will do more to bring it forward than a week's hard firing. Having the plants close to the glass later is one of those fancy notions that have laid hold too firmly of cultivators, and which must be modified in a marked degree if successful results are to be achieved. I will return to the subject of Strawberry forcing, as there have been many failures this year, and others should be averted.—Wm. Bardney.

THE LAURUSTINUS.

Just now this favourite shrub is at its best, being loaded with flowers, and where they are growing intermixed with the red-flowering Ribes, Aucubas, and common Laurels arranged near the front of shrubbery borders the effect is very pleasing. My object, however, is to ask for more attention to be paid the plants to prevent their running up too high, and causing them to become naked or bare of branches at the bottom, which does not add to their beauty. It is well known that after the shrubs become established they are liable to send up strong shoots which, if allowed full scope, will throw them out of their true character by depriving them of their lower branches. These strong growths should either be shortened or cut clean out soon enough to prevent the shrubs being disfigured by the operation. Again, where they are getting old and their lower branches showing weakness, one of the best plans I know of is to layer them during the autumn. These will throw up young growths, and the shrubs be thereby renovated in a comparatively short time, and as they are not deep-rooting a surface-dressing of manure will help them to make fresh roots and promote healthy growth. In town gardens, where this shrub is so largely used, the above treatment would much improve the many unsightly specimens we often see. I am of opinion that it is not a good plan to dig among such

surface-rooting shrubs as is the practice in most places, but instead advise more surface hoeing and manure dressing, especially where the subsoil is not good. My employer is a great advocate of this treatment for most trees and shrubs, and the appearance of them and the growth they make amply prove the value of the practice.—THOMAS RECORD, *Folkington Manor.*

CROPS THAT PAY.

BROCCOLI.—The ground from which late Broccoli has been cleared, previously produced a crop of second early Potatoes. These were planted 3 feet apart, the same as all the early and second early Potatoes that we grow, except those planted closely together on warm borders. The rows of Broccoli are, therefore, 3 feet apart, and being naturally hardy in consequence pass the majority of winters safely. The ground occupied by late Broccoli is generally reserved for French Beans, the variety being Canadian Wonder. The ground between the rows of Broccoli is liberally manured during January. By digging only in the centre of the rows no injury to the crop occupying the ground results, but on the contrary, when the plants begin growing the roots quickly take possession of the manure that lays near the surface, and which is only just covered during the process of digging. We have found by this treatment that the heads of the Broccoli are larger than would be the case if the ground was left unmanured until the crop had been cleared away. This is no small advantage in rendering the crop a profitable one when the produce is solely required for market purposes. But there are other advantages that attend this mode of culture that cannot be overlooked. To get the succeeding crop in at the proper time is one of the first steps towards success. To have the ground to dig and manure at the busy season of the year when planting should be done and work presses heavily is bad and thoughtless practice, yet it is too often followed, and failure is the result. By preparing the ground at the time stated the Beans can be sown before the Broccoli are removed from the ground, which leaves the rows 3 feet from each other.

Those who have been in the habit of planting Beans close together may think that distance from row to row is a waste of ground. Experience has proved that a plat of Beans closely planted will not yield more than two-thirds of the crop that will be obtained if they are given ample room for each plant to branch freely and fully develope itself. If the ground is in good heart and has been well manured the variety advised will meet in the rows before the season is over. We strive, however, to snatch a crop of Cos Lettuces from between them. As the Broccoli are removed the space where they have been growing is turned over and broken up with a fork, and the Lettuces planted at once 9 inches apart in the row. To insure their doing well and being off the ground before the Beans crowd them, the plants must be strong and ready for placing out directly the Broccoli are removed. If the plants are small and weak the prospects of success are by no means certain. If, however, the Beans display the least signs of crowding the Lettuces, this can be prevented without injury to the Beans by placing a few stakes along the row and running a cord from end to end on each side. The Lettuces, if they do well, may be estimated at one-third of what the ground would produce if entirely planted with them. In depending upon these the Beans are a profitable crop, for they seldom realise less than twopence a pound. While on the subject of Beans it may be stated that Scarlet Runners are a profitable crop in some localities, not if they are staked on the orthodox fashion. The stakes, and the labour of staking combined, the extra distance they must be planted apart, renders the crop next to a profitless one. If staked, to do them well they should be 6 feet from row to row, unstaked 3 feet, or another 6 inches at the most. Directly they show signs of running the points are clipped off with a pair of shears. If this practice is followed two, three, or more times during the season they will fruit abundantly and not exceed the height and width of Canadian Wonder. In spite of this the returns from a given portion of ground will not equal in most localities that obtained for French Beans grown on the same space. Generally a halfpenny or penny per pound less is paid for them.

Our object in growing early and second early varieties of Potatoes only, and planting them 3 feet from row to row, is not altogether for the purpose of securing a second crop, although this is a matter of no small moment in rendering ground remunerative that has to be worked with the spade. The main object, however, is to get the crop off the ground and into the market before those under field culture are ready for digging. The lowest price by this system may be said to be 5s. a cwt. instead of 1s. 6d. less. The price falls quickly after farmers once commence supplying the market in quantity. It is only natural to suppose that the system of closer planting which they follow, even if the price is lower, pays better than the method of planting 3 feet apart. This, however, is not the case, for the tubers can be planted closer in the row than they practise, and the greater space allowed for development results in a heavier crop of tubers than they generally obtain. Crops by this method on our rich land are enormous, and profitable at the price that can be obtained for them, without taking into consideration the second crop.

CAULIFLOWERS.—One of the second crops from amongst Potatoes, and generally one that pays, never better perhaps than last year, that is where the crop proved a success, is Veitch's Autumn Giant Cauliflowers. To grow these well they must be planted on rich fertile land, or the heads are too small to find a ready sale in the market. The seed should be sown in a cold frame about the middle of March, so that sturdy well-hardened plants are ready for putting out at once. A shallow drill between the Potatoes should be drawn and the plants placed 18 inches apart. They then become established, and are growing freely before drought sets in to prevent them from making good stuff. Once they are well established and growing freely dry weather does not appear to do them much harm. As the Potatoes are dug, if they can be given a soaking, if the weather is dry, of liquid diluted with water from the drainings of the manure heap, and the soil in digging turned over the moistened portion of ground to prevent evaporation, a rapid growth will follow. Fine heads which will prove profitable will result.—MARKETER.

PREMATURE FLOWERING.

WHY vegetables "bolt," to use a technical phrase—in other words flower before they are expected—why ornamental plants are made to flower in profusion by one man, whilst by another they are termed difficult; why some trees fruit, and others apparently under similar conditions are barren; and, to close, why some shrubs flower and others do not. These are questions which may not be disposed of in a flippant way. Such is the position of this question; and here I must confess to the recklessness or bewilderment of that honest and free-hearted Hibernian, who, when asked where he was going, said he did not know until he got there.

VEGETABLES.—I need not run over the whole range of our culinary vegetables. I, therefore, must typify them by such crops as Celery, Lettuce, Cabbage, Cauliflower, and Spinach. A discussion concerning these will at once throw light on the rest. I take them in order. Celery sometimes "bolts." What is the predisposing cause? If anyone was to ask me what would be the readiest mode of compelling the young Celery plants to "run"—that is, to blossom, I should answer, "Sow them early, transplant them in very rich soil, and let them stand thus before being finally planted, until they are 9 inches in height;" such will be sure to "run" betimes in the autumn or winter. Lettuces that endure the winter, commonly called early spring Lettuces, are notorious for being a long time in use without advancing to the blossom state, and why? Simply through the comparative absence of those exciting causes which cause plants to assume the blossoming condition. But Lettuces sown in May on rich soil, and transplanted when stout plants, will in general "run" before they make good hearts. The only way to obtain good hearted Lettuce in the heat of summer is to sow them in drills on the richest soil in the garden, if loamy so much the better. There they may be thinned out to the proper distance, and with waterings when necessary they will produce heads as fine as in spring. The Lettuces are a short-lived race, and any check after rapid growth during the exciting heats of summer will be sure to induce this blossoming habit. In the cool of autumn and early spring they bear transplanting well, for that kind of elaboration which tends gradually to the production of blossoms goes on very slowly, the exciting causes of heat and light being at a low point.

And now we come to the Cabbage. These are not so notorious for bolting as some other vegetables, and their tendency to run to blossom is at all times increased by any spurious mixture in their blood. How this occurs is not particularly plain, but certain it is that they are more excitable when such is the case. But the true Cabbages, sown at particular p riods, are unsafe in this respect. Let anyone sow his best kind in the first week of July, and the probability is that they will all, or many of them, bolt in the succeeding April. The fact is, that they grow with too much rapidity in the month of September;—too fast to form a heart in that young state;—and, being transplanted, which they must be, at the end of that month, they receive a sudden check on the heels of grossness, and this check at once lays the foundation for the blossoming principle. But how different the result if the Cabbage seed be sown in the middle of August. By the period the young plants are up—say, the early part of September—the summer heat has declined; consequently, the plants grow more steadily and are shorter jointed; and the over-exciting causes being reduced to a fair equilibrium, the whole tendency of the plant is to produce what is termed heart, and a good Cabbage is the result.

In passing on to Cauliflowers, I may observe, that these are liable to "button," a technical phrase; and, I beg it to be understood that I am by no means the inventor of this term. It has been used by our great grandsires, and, still being accepted by practical persons, I do not feel

myself in a position to coin new terms. I will, however, endeavour to show that science itself recognises the facts connected with it, although she employs another kind of phraseology to express it. The term buttoning signifies forming a blossom-bud, or tiny head, whilst the plant is young. One man sows Cauliflower seed, genuine, in the third week of August, in order to produce early spring Cauliflowers in May and June. He sows them on rich soil, and transplants them—what he calls strong fine plants—in October, in frames or glasses, providing again very rich soil for them; for all the world, says he, knows that the Cauliflower requires a generous soil. But, how puzzled may this man be to find in March or April that out of a dozen handglasses, containing half a hundred permanent plants, he will not have much more than a score of Cauliflowers after all his pains.

Another man will sow his Cauliflowers at the same time on poor soil, or one of a moderate character, and transplant them on similar soil, and not one will button; yet they were from the same samples of seed. Here, then, is another case in point. The fact is, that if Cauliflowers, like Celery, are once allowed to become gross, in the seed-bed, or where they are transplanted, and are removed afterwards, they are sure to possess a tendency to button.

Spinach is another susceptible vegetable in this way, and the last I shall name in this section. This plant is very much excited by heat alone, irrespective of rich soils. Indeed, in this case at certain seasons, rich soils are averse to that speedy bolting, or running to blossom. Spinach sown in August stands the winter; and, be it ever so strong, it scarcely makes an effort to run to blossom until April or May. But the same kind, sown in the first week of June, will produce a very different plant. The former, stout, robust, and exceedingly prolific of foliage, also averse to a blossoming tendency; the latter, just producing a few leaves, with a highly attenuated stem, and rushing forward to blossom with celerity. This plant is, perhaps, one of the best we possess, for exhibiting to a student the influences of those laws which govern the vegetable kingdom, by presenting to him, in their extreme effects, a first proof, or sound and lasting impression. Spinach happens to be extremely excitable, more so than most of our ordinary vegetables. Heat is the most exciting cause, and this, combined with much solar light, is doubly influential as to the blossoming tendency. Thus, good gardeners sow their summer Spinach in shady situations, and on rich soil, in order that the growth may be as slow as possible in the plant, whilst the root is supplied with all the accessories to robustness.

It may now be seen that heat and drought, and much solar light, are predisposing causes; and the influences of these are much enhanced by checks of any kind, and by poor soil. Heat, of course, is highly exciting, as also trying to the whole system of the plant. Heat, with deficiency of moisture, has a strong tendency to hasten the development of all annual plants; and those I have selected to illustrate this matter, may, I suppose, all be termed annuals, in one sense at least. Indeed, like a host of other things, they are annual or biennial, according to circumstances; and to exemplify the latter is, indeed, the chief design of my remarks. Heat, with much moisture, has a tendency to produce a profusion of exuberant foliage, provided the soil is good. This condition of crops is called "proud" by many farmers. "My Wheat is too proud," they will say, "it will go down."

And what makes Wheat or other straw crops go down? What produces this habit, causes a crop of Cabbage, Lettuce, Spinach, &c., to become lumbering, or to use a technical phrase, "to smother itself?" The fact is, that the plant is too succulent, has grown too fast, and assumed a character similar to that of overfed and excited animals. I had almost said there was a disproportion of woody fibre. Drought in itself, without a superabundance of solar light, has a tendency to promote this "bolting" by withholding the necessary supplies, and this, more especially, if the subject has been previously much excited by heat, moisture, and a fair supply of nutriment. Such a course may be fairly classed under the head "sudden checks," the tendency of which I will further advert to. Those who would fully understand the character and influences of sudden checks, after an excitable condition, may refresh their ideas by a consideration of the effects of root-pruning, ringing, and those other manipulations. Who thinks of trying to make a seedling fruit tree bear when only two or three years of age? And why not? Simply because there must be a fund of strength or maturity previous to any attempt at fruitfulness. But let a fruit tree of any kind after being planted some three years, be planted at a proper season, and under proper circumstances, and the roots pruned withal, and you may feel almost assured that it will be covered with blossom-buds. Here, then, is the sudden check after high excitement; and acting in a manner much in analogy with checks on our ordinary vegetables.

But, to revert to drought and its effects on the foliage of plants, the flagging of vegetables in cases of extreme drought plainly shows what a change must be induced in the system. A lean or hungry soil is another cause of bolting in vegetables, as before observed. Let us also examine this portion of the question. Such soils are generally "hired" to perform their duty by a little extra decayed manure; and, indeed, without it they would be all but sterile. The term "hiring" is much used in our north-western quarter to signify that the land in question is "ploughed out," to use a farming expression, or, in order to please the gardeners, let us say "dug out." But still these technical terms may need translating, to suit ladies and gentlemen of other localities, and it simply means in its practical acceptation, that the properties the soil acquired whilst in a rest state or pasturage are exhausted; there is scarcely anything soluble left in it, the organic materials especially being used up.

Then there is the sudden check occasioned by transplanting things after growing somewhat gross, and I must offer a few remarks concerning it. Plants thus circumstanced have already a fund of sap in store, nearly equivalent to the demands of the fructifying principle, and the only thing necessary to induce the habit is a temporary and partial cessation of rapid growth, and that this is a sure consequence of summer planting is notorious to everyone. But our readers may like to know why this result should follow, and without attempting to flounder amongst abstruse phases of science, I may offer a simple explanation, which will, I think, be borne out by both science and practice. We all surely know that the principal functions of plants may be, for an off-hand purpose, reduced to two divisions—absorption and elaboration. As for the process of assimilation, or the appropriation of the elaborated sap, we may pass it by, taking it for granted that, as in the animal world, so in the vegetable, the frame is built up and the general purposes of nature carried out by a process of the kind. Now, there is at times, I conceive, a condition in which the root is able to satisfy the demands of the branch, and *vice versa*. When the former is the case what may we expect but a tendency to produce leaves and branches, and a postponed fructification; when the latter, a precocious tendency to the blossoming principle, which soon, of course, overtakes the supplies. And this applies to fruits, and even shrubs, as well as vegetables. Thus, even a common countryman, without any recognition of such facts, instinctively, as it were, cuts off a part of the exuberant foliage of his Cabbages, his Greens, or his Swede Turnips, and this, although performed by mere rule of thumb, happens frequently to be correct as to principle, inasmuch as it reduces the perspiring powers of the plant, thus avoiding too heavy a tax on the root action, now in a somewhat debilitated state. I mean, of course, when transplanting gross or leafy plants during warm weather.—R. N. E.

EELWORMS AS GARDEN PESTS.

We are inclined to think that these creatures occur more frequently in gardens than has been hitherto supposed, the mischief they do being attributed to other enemies as insidious which lurk in the soil of gardens and beds. In the course of 1886 we received several communications from a correspondent in this journal describing the annoyance and loss he was experiencing from the attacks of some mysterious insect, which was seldom seen and difficult to secure, but which seemed to be extending its ravages alike amongst flowers and vegetables. On examination it was found that the soil was infested with at least two species of the millipede tribe, Geophilus longicornis and G. subterraneus, and it also contained specimens of a species of eelworm in different stages of growth. These, by most, would probably be taken for extremely minute worms of the earthworm tribe. Their identification, however, was not then possible; they might have belonged to the species which Miss Ormerod has specially noticed in her annual entomological report, and which had previously been chronicled as occurring at the roots of garden plants, or if not, then to a species very similar in size and habit.

Doubtless the effects produced by this eelworm vary according to the nature of the plants it may attack, but to the Oat, upon which it has now been found for some years, it is injurious by causing the curious appearance known as "Tulip root," a diseased swelling at the base of the stem; the leaves also take a sedgy character. Having been found besides swarming at the roots of the Teazle, there originated the earlier name of Tylenchus Dipsaci, but as it is now believed to visit a large number of plants, its appellation has been changed to T. devastatrix, alluding to its activity as a destroyer. During 1887 samples of this pest were obtained from Clover fields in counties lying as far apart as Kent and Linlithgowshire, farmers complaining of "Clover sickness" amongst their crops, a malady formerly ascribed to a fungus, and many fungoid spores were observable, but the abundance of eelworms also at the roots suggested they might be the cause of the mischief. Dr. R. Bos, a naturalist, who had frequented the Tylenche in the fields and gardens of the Netherlands, verified the Clover specimens sent him as being T. devastatrix. He has reported instances of its damaging Onion crops and feeding on the roots of meadow grasses, on Rye, and of course on Oat, both in England and on the Continent. Oats grown on sandy or gravelly soil are most affected, and in severe attacks the ear is never formed. This eelworm has been discovered on Carnations occasionally, a peculiar malformation which Dr. Bos styles the "Pine Apple growth," and Hyacinths have been infested, the effect being "ring disease." It was supposed T. devastatrix visited crops of Beans and Peas sometimes, but Dr. Bos thinks it does not touch these plants. Minute as are the eelworms, their length varying from the sixth to the twenty-fourth of an inch, so that some cannot be seen without a magnifier, it is believed each individual worm lives several years, and not only so, such is their vitality, that after being eaten by animals they will pass through them uninjured to recommence their attack on vegetable substances. Ordinary insect killers do not touch these eelworms, but gas lime proves effective, and also manuring with a mixture of the sulphates of ammonia and potash. It must be allowed that all the eelworms are not to be dreaded, for certain species appear to limit themselves chiefly, if not entirely, to decaying matter, and hence form a part of the great army of Nature's scavengers.—J. R. S. C.

ORCHIDS

SCUTICARIA KEYSERIANA.

At the Temple Show of the Royal Horticultural Society last week, Messrs. Sander & Co., St. Albans, exhibited a plant of a new Scuticaria from the Roraima district, and which was named in honour of the Lord Mayor of London, Scuticaria Keyseriana. It has the same habit as the other species, S. Steeli, S. Hadweni, and S. Dodgsoni, which are all South American, the leaves being

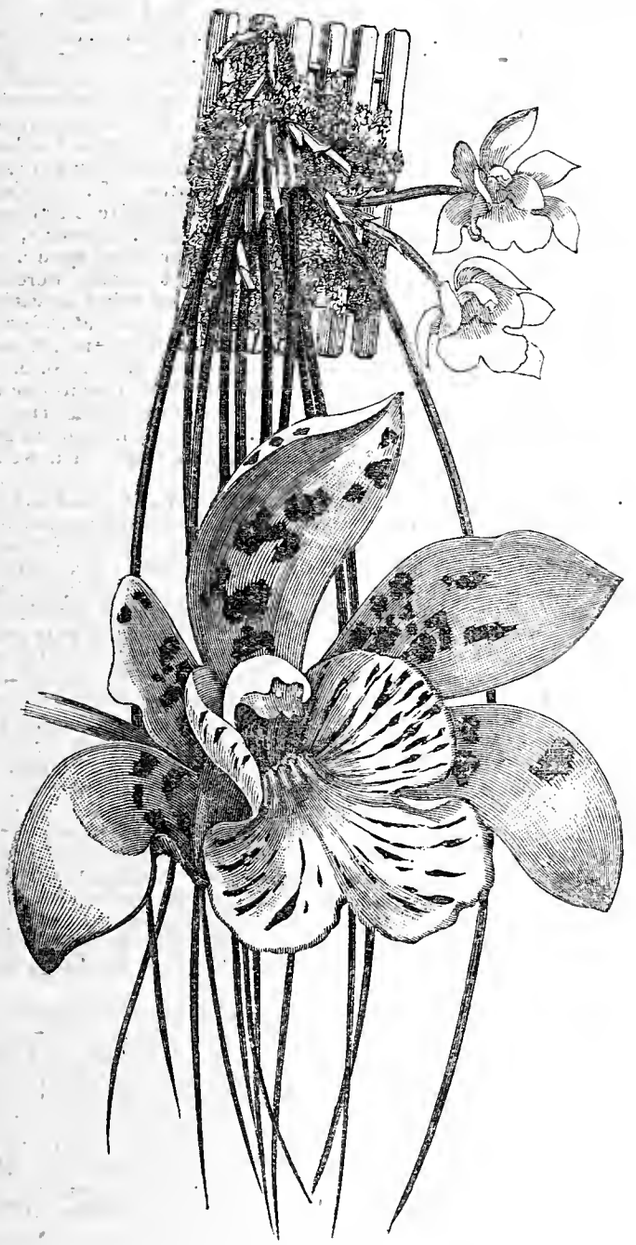


Fig. 55.—SCUTICARIA KEYSERIANA.

several feet long, cylindrical or quill-like, and pendulous; the flowers fleshy, with broad petals and sepals heavily spotted with purplish maroon on a yellowish ground; the lip broad, open, and streaked with a similarly dark colour on a lighter base. The plant is a handsome one, owing to the clear well-defined markings.

CATTLEYAS.

All that are in flower should, if practicable, be arranged by themselves, so that their flowers can be kept perfectly dry. When mixed with the general stock of plants and the syringe used, it is very difficult to keep them from becoming spotted. They last longer in good condition when a cooler and drier atmosphere can be given them during the time they are in bloom. This provision is beneficial, not only as far as the lasting of the flowers is concerned, but those not in flower can be given the treatment they require, which it is impossible to do without injury to the flowers more or less when the whole are mixed together. Those growing and rooting freely should occupy the warmest position in the house where a close moist atmosphere can be maintained, and the plants syringed twice on fine days. During dull weather the syringe need not be used; in fact, only when the water that lodges in the new growths can be evaporated with certainty once in every twenty-four hours. When this is done no injury to the young growths will result from water lodging in them. On fine days this can be readily prevented by giving air early in the day at the top of the house. Those that have not yet started into growth should be watered carefully, but more liberal supplies will be needed from the present time. Plants growing in baskets and on blocks with little or no moisture-holding material about them must have constant attention. Syringe plants in this condition liberally, so as to thoroughly soak the wood to which the roots cling; merely dewing them over is useless, for the moisture is gone very soon afterwards. Plants subjected to such treatment seldom make satisfactory progress, but if well soaked and syringed they will do well and perfect strong stout pseudo-bulbs.

COOL ORCHIDS.

Artificial heat can be dispensed with for the occupants of the Odontoglossum house, except on solitary nights when the thermometer falls very low. The atmosphere must be kept moist by throwing abundance of water about every available part of the house. Dry atmospheric conditions are detrimental to these plants, and can be avoided if the house is kept close and shaded instead of admitting air liberally when drying winds prevail. More liberal ventilation will be needed than has been the case up to the present time, which will entail greater care in keeping the necessary quantity of moisture in the atmosphere. The plants should have abundance of water at their roots, and no harm will be done them if some is applied to the foliage. They must not be unduly shaded, but every ray of light possible should be admitted to them, so that their growth will be short and stout. It is necessary only to protect the plants from bright sunshine. A close confined atmosphere combined with overshading will draw up the foliage so weakly that it will not have strength to maintain an upright position. Pseudo-bulbs made under such conditions seldom flower satisfactorily.—N. G.

ROYAL HORTICULTURAL SOCIETY.

SUMMER SHOW IN THE TEMPLE GARDENS.

May 17th and 18th.

Last week we gave a brief indication of the character of this Show, but a few more details of such a remarkable Exhibition will no doubt be welcomed by many of our readers. Most unfortunately the weather was of the worst possible character on the opening day, rain falling with scarcely any cessation. It was better on the second day, but showers were frequent. Exhibitors came forward in greater numbers than seemed to be likely at one time, and the exhibits throughout were of a most interesting description and high quality. Large as was the space provided it was adequately filled.

The entrance marquee, 200 feet long and 30 feet wide, was devoted mainly to the groups of market plants in competition, hardy plants, cut flowers, and fruits. The groups were arranged upon the grass on the right hand side, and a very bright and varied effect they afforded. A stage upon the opposite side contained the cut flowers, while it was found necessary to have a central stage also for miscellaneous collections, and some groups of cut flowers which could not be accommodated at the side. This tent was remarkably well filled, and the inspection of the numerous exhibits occupied the visitors a considerable time.

By far the most beautiful portion of the Exhibition was, however, contained in the spacious marquee at right angles with the one just mentioned, and as this was 160 feet long by 60 feet wide it afforded ample room both for plants and people. The central stage running the whole length of the marquee had one side filled with Orchids, one of the most extensive and handsome displays of these varied and beautiful plants that has ever been provided in the metropolis. Some of the important amateur and trade collections were represented, and the plants throughout were distinguished alike by their vigorous health and their profusion of flowers. The other side of the central stage was filled with miscellaneous groups, Pelargoniums, &c., while around the sides of the marquee were some scores of specimen Roses, from huge bushes 6 or 7 feet high to compact little plants in small pots, all bearing abundance of blooms. The Orchids, Roses, groups of plants, and the cut flowers were in fact the great features of the Exhibition, and were alone worth a long journey to see.

On Thursday the Show was visited by the Lord Mayor of London, accompanied by the Lady Mayoress, the Right Hon. W. E. Gladstone, M.P., and J. Chamberlain, M.P., with many other distinguished persons, and the attendance was much better than could have been expected in such unfavourable weather.

ORCHIDS.

A magnificent group of Orchids was contributed by Baron Schröder, The Dell, Egham (gardener, Mr. Ballantine), and the silver cup

awarded as the first prize in the class was an appropriate recognition of its merit. The principal plants were the following, but every one staged was of exceptional character, the strong growth and high colour of the flowers being very marked. Cymbidium Lowianum had seven long racemes of large flowers, the tip very deeply coloured. The specimens of Odontoglossum vexillarium were extraordinary alike for their fine healthy condition and the number of their flowers; they were literally masses of bloom, and they varied in colour from the deepest of the rubrum type to some nearly pure white. Cattleya Skinneri was represented by two handsome plants loaded with flowers, one variety of unusually rich colour, and in contrast with them were valuable plants of the pure variety alba. Odontoglossum Roezli was notable in the fore part of the group. Of O. crispum there were some of the choice varieties for which the Dell collection is famed. Masdevallias Veitchiana grandiflora, Harryana armeniaca, apricot coloured; Lindeni and Chelsoni; Cattleya Regnelli with seven large flowers, and the dwarf pure white Aerides Williamsi (certificated) were a few other good plants amongst many others of scarcely less interest.

Sir Trevor Lawrence, Bart., M.P., Burford Lodge, Dorking (gardener, Mr. Bickerstaffe), exhibited a group of Orchids, for which also a silver cup was awarded, and though the plants were smaller and less effective individually than the preceding they comprised some of the most interesting in the Exhibition, and all were in excellent condition. Very conspicuous was a plant of Lissochilus giganteus, having a flower stem 8 feet high, the flower-bearing portion 12 inches long and crowded with large, soft, rosy-tinted flowers. The peculiar Selenipedium Lindeni, or Uropedium, as it is better known, which is like a Cypripedium caudatum without a lip, had several of its remarkable flowers with long green striped sepals and still longer, narrow, dull purplish petals. Catasetum Christyanum had some strange brown and green flowers with fringed lips; Acanthephippium bicolor had twelve flowers, white tipped crimson; Spathoglottis Kimballiana is a distinct effective plant with large yellow flowers at the apex of a long stem; Cypripedium caudatum had thirteen fine flowers; Cyrtopodium Andersonianum had a three-branched panicle of yellow flowers; Oncidium Marshallianum, two beautiful panicles, with Dendrobium Brymerianum, Oncidium undulatum, Masdevallias, Odontoglossums, and innumerable others. Some very handsome varieties of Anthurium Schertzerianum were also sent from the Burford Lodge Gardens, the fragrant Violet-like Tinnæa æthiopica and the New Zealand Forget-me-not, Myosotidium nobile, which few succeed in growing well.

In the classes for nine Orchids and a group of Cattleyas and Lælias Mr. J. Cypher, Cheltenham, was the only exhibitor, and he was awarded first honours in each case, securing a silver cup for the nine Orchids. The plants were the same as those with which on the previous day Mr. Cypher was equally successful at Regent's Park, and they need not be particularised. It must be mentioned, however, that the superb varieties of Lælia purpurata in both classes were greatly admired.

A beautiful group of Odontoglossums from H. M. Pollett, Esq., Fernside, Bickley (gardener, Mr. W. Parks), won the premier award in that class. The plants comprised capital examples of Odontoglossum Edwardi, Halli, Andersonianum, Pollettianum, crispum, Wilckianum, and Ruckerianum, tastefully arranged with Adiantums, and the collection altogether was an extremely pleasing one. F. Wigan, Esq., Clare Lawn, East Sheen (gardener, Mr. D. East), showed a choice group of Orchids and Ferns. Major Lendy, Sunbury House (gardener, Mr. S. West), was first with a collection of Orchid flowers, and J. Hemwerde, Esq., Ellott Place, Blackheath (gardener, Mr. G. Barker), showed two large plants of Cattleya Mendeli, one having eighteen flowers, and the others a less number.

Messrs. F. Sander & Co., St. Albans, arranged an exceedingly beautiful group of Odontoglossums, Cattleyas, and Ferns. The varieties of Odontoglossum comprised some of the most distinct and handsome in cultivation, together with the grand varieties of Cattleyas, C. Mossiæ londinensis and C. Mendeli Rothschildiana, with the new Scuticaria Keyseriana noted in another page. A silver cup was awarded for this group, and to Messrs. H. Low & Co., Clapton, for a pretty group of Orchids, and Messrs. H. Page & Son, Teddington, also had a group of Cattleyas, Odontoglossums, and Oncidium Marshallianum.

ROSES.

As already mentioned these formed an important portion of the Exhibition, and the plants were excellent in all respects, well clothed with foliage, and bearing substantial blooms. Messrs. Paul & Son, Cheshunt, won a silver cup as first prize in the class for twelve Roses in pots, these being much the largest specimens shown, 4 to 7 feet high, and about the same in diameter. The varieties were Charles Lawson, John Stuart Mill, Catherine Soupert, Centifolia Rosea, Celine Forestier, Cheshunt Hybrid, Beauty of Waltham, Edouard Morren, Juno, Madame Victor Verdier, Magna Charta, and Comtesse de Serenyi. Messrs. Jackman and Son, Woking, were second, and secured a silver Banksian medal, as besides their twelve specimens they had a group of similarly creditable plants. Mr. C. Turner, Slough, was third, his Roses being neat compact examples of good varieties, about 3 feet in diameter, very useful, but too small in comparison with the others. Mr. Wm. Rumsey, Waltham Cross, showed in the same class, his plants being highly commended.

A non-competing group of Roses in pots and cut blooms from Messrs. W. Paul & Son, Waltham Cross, won the exhibitors a silver cup, and occupying a portion of one side and the end of the large marquee this collection had a wonderfully fine appearance. Numbers of choice varieties were shown, but the distinct new hardy Tea Rose Sappho, certificated at Regent's Park on the previous day, was notable amongst them, together with the rich crimson H.P. Crown Prince, both Waltham Cross seedlings.

GROUPS.

The groups staged in the classes provided by the schedule, and those of a miscellaneous character not in competition, occupied considerable space and formed one of the characteristics of the Exhibition. With a group of plants occupying a space not exceeding 150 square feet Messrs. J. Laing & Co., Forest Hill, were first with a highly effective well arranged contribution similar to that so much admired in the centre of large marquee at Regent's Park on Wednesday. Palms and Crotons formed the background, with large Azaleas, Aralias, Caladiums, and Dracænas, smaller plants of Odontoglossum crispum, Cattleyas, brilliant Tuberous Begonias, Pimeleas, and Gloxinias occupying the body of the group, with a margin of Odontoglossum and Caladium argyrites. Gloxinia Madame Bleu, which has been certificated elsewhere, is a pretty variety, crimson edged white.

The competition in the class for groups of plants from market growers was remarkably keen, and the collections of well-grown, useful, and brightly coloured flowering or elegant foliage plants, added largely to the interest and beauty of the Exhibition. Three silver cups were offered by the Duke of Bedford in this class, and one for cut flowers, those for groups being won by Mr. William Iceton, Barnes and Roehampton, and by Mr. J. Sweet, Newbridge. Mr. Iceton's collection comprised tall handsome Palms with a margin of Dracæna Lindeni and Isolepis, simple, yet very attractive, and a suitable position was assigned it in the large marquee near one of the entrances. Mr. Sweet's group was chiefly composed of flowering plants, decorative Pelargoniums, Fuchsias, Cinerarias, Heaths, yellow Marguerites, Myosotis, Heliotropes, &c., and though groups of this character often have a rather glaring and even startling appearance, the bright colours were so well placed, and softened by sufficient dwarf Ferns, that it had a satisfactory effect. Mr. E. Rochford, Cheshunt, was second with a rather more formal but bold group, Hydrangeas forming the chief feature, in contrast with miscellaneous flowering plants and Ferns. Mr. H. B. May was also second for a group of Ferns, Crotons, and a few other foliage plants arranged with the greatest taste, and though no flowering plants were employed, it found as many admirers as the two first prize groups. Messrs. J. & J. Hayes, Lower Edmonton, were third for a well contrasted array of flowering plants.

Calceolarias from Mr. James, Farnham Royal, gained the first honours in this class, the flowers large, and of the varied rich colours and delicate markings that distinguish his plants. For a group of Pelargoniums Messrs. J. & J. Hayes were first, their plants including some admirable varieties, one named Fanny being of a delicate pale pink, of compact habit and very free. The groups of hardy plants were practically the same as those at the preceding day's show, and the prizes were awarded in the same order—namely, to Messrs. Collins Bros. & Gabriel, Hampton; T. S. Ware, Tottenham; and Paul & Son, Cheshunt, the first-named winning their position by the larger size and greater effectiveness of the plants shown, the other two having more numerous and smaller plants, but several of much interest. Considerable difference of opinion respecting the respective merits of these collections was, however, expressed, and many persons preferred the second group to the first.

Nine well-flowered Azaleas from Mr. C. Turner secured him the first prize in the class, but he had no opponent. The plants were of medium size, but the varieties were either new or included some of the most effective, such as Cordon Bleu, M. Thibaut, the double white Madeline, Comtesse de Flandres, Apollo, Etendard de Flandres, Chelsoni, Jean Vervaene, and Vervaeniana. In a large Exhibition of this character a few Azaleas are almost indispensable, as they afford a remarkably massive and brilliant colouring, but many of the giant specimens have an overpowering effect.

Pelargoniums, too, of the show, fancy, and decorative types are welcome additions at this time of year, the nine premier specimens from Mr. Turner comprising the best of those he had at Regent's Park, flat-trained specimens, 4 to 5 feet in diameter, and extremely well flowered. The show varieties were Prince Leopold, scarlet; Lady Isabel, purplish with maroon blotch; Kingston Beauty, white with purple blotch; Amethyst, crimson, dark upper petals; and Matin. The fancy varieties were Princess Teck, East Lynn, Fanny Gair, and The Shah. Messrs. J. & J. Hayes were second, with capitally grown plants of the decorative market type. Princess Maud, Duchess of Bedford, Goldmine very bright and showy, Triomphe de St. Mande, and Lady Blanche were some of the best.

One of the most simple yet tasteful groups in the Exhibition was that from Messrs. J. Veitch & Sons, Chelsea, and for which a silver cup was awarded. Those employed were dwarf compact Japanese Maples in all their diversity of foliage both in form and colouring, about a dozen strong examples of Lilium Harrisi with large heads, massive pure white trumpet like flowers, a number of the rich and showy Tree Pæonies, side plants of Hydrangea paniculata grandiflora, and a front plant of Arundo donax variegata beautifully striped with pure white and green. The Maples were exceedingly graceful, the most distinct forms amongst them being palmatifidum; flavescens, yellowish; dissectum, red, deeply divided; decompositum, finely cut and handsome; sanguineum large deep red; japonicum aureum, golden, fine leaves; linearilobum, dark purplish red, linear regularly spreading segments; septemlobum elegans; purpureum dark reddish purple, fine; and roseo-marginatum. The numerous delicate shades of green, yellow, and red of the leaves in these Acers render them great favourites both for outdoor planting and

decoration under glass. The chief of the Tree Pæonies were Rosea, salmon scarlet; Incarnata, salmon, very large flowers; Reine Elizabeth, bright red large flowers; Berenice, purple; and Carolina.

Mr. B. S. Williams, Upper Holloway, was awarded a silver-gilt medal for an extensive well arranged group of miscellaneous plants, comprising both flowering and foliage specimens from stove and greenhouse with Orchids. Dracænas, Crotons, Anthuriums, and Azaleas formed the background and greater part of the group, and amongst them the following plants were notable—Lælia purpurata, very fine; Eurycles australasica with white flowers and Eucharis-like leaves; Phœnix rupicola, a tall graceful Palm; Nepenthes Mastersi with deep red pitchers produced most freely; Calanthe veratrifolia, pure white flowers in good heads; Davallia tenuifolia Veitchi, an elegant Fern with finely divided fronds; the peculiar Ataccia cristata, with small dull purplish brown flowers in a dense head, large erect bracts at the back, and long drooping filaments; Ochna multiflora, with red persistent calyx and green fruits; the neat white Gloneria jasminiflora, and the white Azalea Miss Buist, a useful variety of the Amœna type, Imantophyllums, Amaryllises, Crinums, and Dracæna Lindeni.

Messrs. J. Laing & Sons, Forest Hill, were awarded a silver-gilt medal for a group of well grown Caladiums, about sixty plants 4 feet high and as much in diameter, the leaves well developed and deeply or delicately colonred. Some of the more noteworthy were—Candidum, white with green veins; Madame Imbert Kæchlin, yellowish green with red spots; Duchesse de Montemart, white; Ibis Rose, pale rose; Charlemagne, large, red; L'Automne, green and white, bold; Princess Royal, red, edged with greenish yellow; Luddemanni, green dotted white, red veins; minus erubescens, red edged green, dwarf and small, a good companion for argyrites. Messrs. Laing & Sons also had a pretty little group at the end of the centre stage near the entrance.

Messrs. H. Cannell & Sons, Swanley, contributed groups of Tuberous Begonias, comprising several distinct novelties, both single and double; and of Calceolarias, representing the Swanley strain, notable for compact habit, large and variously coloured flowers; and several stands of Zonal Pelargoniums of dazzling colours. Messrs. J. Carter & Co., High Holborn, showed a group of excellent Cinerarias and Primulas, both admirable strains. W. Clay, Esq., Kingston, sent a group of Pelargoniums. Mr. R. Drost, Kew Nursery, Richmond, had a group of Palms, Ferns, and Lilies of the Valley. W. Mellor, Esq., Chingford, Essex (gardener, Mr. J. Nicholson) contributed a pretty group of Caladiums, very neat plants. Mr. T. S. Ware, Tottenham, had a group of Tree Pæonies, Tulips, and Daffodils. Mr. G. Poulton, Edmonton, exhibited an effective group of Coleuses and Lilium longiflorum and candidum. Messrs. J. & J. Hayes, Edmonton, had a group of Pelargoniums and Hydrangeas; Mr. G. Braid, Winchmore Hill, a group of Pelargoniums; and Mr. H. B. May a group of Calceolarias, Mignonette, and Adiantums.

CUT FLOWERS.

In two-day summer shows the cut flowers are usually the most satisfactory portion of the exhibits, but at the Temple perhaps the only advantage of the wet dull weather on Thursday was that the flowers lasted well until the end of the second day, and looked almost as fresh and bright as when first staged. Though these exhibits are always interesting, they rely more upon their individual attractions than general effect, as they cannot be arranged to much advantage upon long straight tables. Messrs. Barr & Son, Covent Garden, had a very extensive contribution of Daffodils and hardy flowers, a choice selection of the former in all the types, and the most distinct of the latter for general garden culture, Saxifraga pyramidalis, Anemone fulgens, Doronicums and Irises forming prominent features. A silver cup was awarded for this group, and a cup given by the Duke of Bedford was awarded to Mr. Poupart of Twickenham for a collection of market flowers, comprising Lilies of the Valley, Narcissus poeticus and biflorus, Forget-me-nots, Trollius, Tulips, Anemones, Wallflowers, and Camperne'les. In the class provided for hardy flowers by the Society, Mr. T. S. Ware won first honours with an excellent collection of Daffodils, Tulips, Lilies, the double bright red Anemone Le Brillante, Lupinus Nootkanus, the white Ranunculus amplexicaulis, and the yellow R. speciosus, with many others. The second place was taken by Messrs. Paul & Son, Cheshunt, who had a varied and interesting collection, including representatives of most of the best hardy plants in flower at this time of year. The only other class specially for cut flowers was that for twenty-four Roses, in which Mr. Rumsey, Waltham Cross, took the lead with admirable blooms of both Teas and Hybrid Perpetuals, Mr. C. Turner and J. Walker, Thame, following in the order named.

From Mr. J. Walker's farm at Whitton came a remarkable collection of fancy, Parrot, and other Tulips, which were as much admired as any other exhibit in the same tent. Daffodils and Doronicums from the same grower were also good, and a silver-gilt medal was awarded for what was one of the best contributions of cut flowers in the Exhibition. Messrs. Hawkins & Bennett, Twickenham, had a pretty group of double Ivy-leaf Pelargoniums, Adiantums, and Lilies of the Valley, the latter arranged in a central half-circle and two side pyramidal groups. The Lily of the Valley was the Victoria variety, for which this firm is noted. Mr. P. H. Garcia, Covent Garden, was awarded a silver-gilt medal for handsome bouquets of Roses, ball and bridal bouquets, erosses, and wreaths. Messrs. J. R. Pearson & Son, Nottingham, had a collection of choice Zonal Pelargoniums, which were highly commended; Mr. Virgo sent some flowers of Myosotis dissitiflora grandiflora; and Messrs. G. Smith & Co., Commercial Road, Pimlico, exhibited samples of a simple stand for flowers of semi-globular form, with perforations for holding water and flowers. (See page 431.)

FRUIT AND MISCELLANEOUS.

Comparatively few samples of fruit were staged, but there were several good collections of Apples. A. H. Smee, Esq., The Grange, Wallington (gardener, Mr. Cummins), sent thirty-six dishes of Apples and Pears very well kept. Messrs. G. Bunyard & Co., Maidstone, had thirty-four dishes of Apples, and Messrs. J. Cheal & Sons had thirty dishes of Apples. Mr. G. Munro, Covent Garden, showed examples of Channel Island produce, including fine Melons, Grapes, and Peas. The Right Hon. Lord Braybrook, Audley End, Saffron Walden (gardener, Mr. J. Vert), exhibited two dishes of fine fruit of President and Sir Joseph Paxton Strawerries. Mr. J. B. Thomas, Covent Garden, had an important and interesting collection of fine Australian Apples in excellent condition, King Pippin, Blenheim, Ribston, and Cox's Orange Pippins being the varieties. Belgian Black Hamburgh Grapes, Jaffa Oranges, Mangoes, Chinese Litchees, Madeira Bananas, and American Cranherries were also represented. Seakale from Mr. W. Poupart, Twickenham, and Asparagus from Mr. W. Lobjoit, Putney, completed the exhibits.

COMMITTEE MEETINGS.—MAY 22ND.

ON Tuesday the Fruit and Floral Committees met in the Drill Hall, Westminster, and though there were few exhibits they comprised some of unusual interest. The attendance of visitors was very small.

FRUIT COMMITTEE.—Present: H. J. Veitch, Esq., in the chair; and Messrs. J. Lee, W. Marshall, G. T. Miles, J. Burnett, A. H. Pearson, P. Crowley, J. Cheal, and T. B. Haywood.

Mr. D. Campbell, The Priory Gardens, Roehampton, sent some fine examples of Asparagus. Two fine even fruits of Cucumber Tender and True also came from the same garden, and cultural commendations were awarded for both. Mr. H. Merryweather, Southwell, Notts, showed fruits of Bramley's Seedling Apple, well kept and good in colour.

Mr. A. Ward, Stoke Edith Gardens, Hereford, sent samples of a seedling Broccoli, and C. Hoare, Esq., Hackwood Park, Basingstoke, showed remarkably fine fruits of Hackwood Park Tomato (cultural commendation). Messrs. T. Pascall & Sons, South Norwood, showed samples of propagating pans, perforated and other pots.

FLORAL COMMITTEE.—Present: G. F. Wilson, Esq., F.R.S., in the chair; and Messrs. J. Fraser, J. Walker, H. Herbst, W. Goldring, W. H. Lowe, G. Paul, R. Dean, B. Wynne, H. Ballantine, J. Dominy, H. M. Pollett, J. O'Brien, E. Hill, A. J. Lendy, W. Holmes, G. Duffield, and J. Laing.

From the Royal Gardens, Kew, came a group of interesting plants comprising the following:—Exacum macranthum, three plants in 48-size pots, each bearing six to eight heads of brilliant blue flowers, the large yellow anthers contrasting strongly with the petals; Lotus peliorhynchus, a species from Teneriffe with linear glaucous leaves and bright red flowers towards the points of the drooping branches; Disa racemosa (D. secunda), a species with long spikes of large bright rosy flowers, the upper petal hooded over the lip; Ansellia africana nilotica, a variety with neat flowers, narrow yellowish sepals and petals spotted and barred with brown and a yellow lip; Phaius Manni, from Assam, having bright brown sepals and petals, the lip crimson in the centre and light at the tip and margin; Diacrium (Epidendrum) bicornutum, with five racemes; the curious small brownish Masdevallia triaristella; Primula Rusbyi, with small bright purple flowers and lanceolate serrated leaves; Haberlea rhodopensis, a dwarf plant with numerous trusses of small Streptocarpus-like flowers, the tube purple, the limb pale, nearly white; Onosma tauricum; Aster Stracheyi; Acradenia Franklini, from New Zealand, with small starry white flowers; the graceful papilionaceous Bossiæa liniphylla, with small orange and red flowers clustered along the slender branches.

In addition to the Orchids certificated, Messrs. Veitch & Sons, Chelsea, sent a plant in flower of Dendrobium porphyrogastrum, a hybrid between D. Huttoni and D. Dalhousieanum, of a pale mauve tint, the lip flat and slightly darker.

R. B. White, Esq., Arddaroch, Dumbartonshire (gardener, Mr. Kidd), showed a plant of Cattleya Mendeli alba with three fine pure white flowers (vote of thanks), also a plant of Cattleya Mossiæ superba, with large flowers and richly coloured lip. F. G. Tautz, Esq., Studley House, Hammersmith (gardener, Mr. Cowley), sent a plant of Cattleya Wagneri, the flowers large white, the lip orange in the throat; also Cattleya Mossiæ Studleyana, with white sepals and petals, the lip very pale crimson, and orange veined in the throat.

E. Ellis, Esq., Manor House, Wallington (gardener, Mr. Glover), exhibited a group of Orchids, including plants of Angræcum Sanderianum with two racemes of white flowers, Thunia Marshalliana, strong, Oncidium Marshallianum, with a large panicle of bright yellow flowers, Cattleya Lawrenceana, with fine spike, and Cattleya Schroderi.

Messrs. J. Laing & Sons, Forest Hill, exhibited a handsome group of Caladiums, Palms, Gloxinias, Tuberous Begonias, and Ferns very effectively arranged. Gloxinia virginale has pure white flowers produced very freely (vote of thanks). The interesting Rose, Madame George Bruant, said to be a cross between Niphetos and R. rugosa alba, it has large semi-double white flowers and neat foliage (vote of thanks). Clivia sulphurea has large flowers and trusses, orange yellow (vote of thanks), and Marquis d'Albertas silvery centre, green margin, and pale red spots (vote of thanks). (Silver medal).

G. F. Wilson, Esq., F.R.S., Heatherbank and Oakwood, Weybridge, sent a stem of Lilium roseum with twenty flowers, Pinguicula caudata, seedling Auriculas, several interesting Primulas, and the pale yellow Roses Isabella Gray and Cloth of Gold. Messrs. Paul & Son, Cheshunt, exhibited some choice hardy plants and Roses. For a dwarf American

Phlox with neatly formed pale mauve flowers a vote of thanks was accorded. The Siberian Edelweiss, Leontopodium sibericum, differs from the ordinary form in its smaller greenish white heads. The "Fairy Borage," Eritrichium nanum, light blue, very small; Pulmonaria paniculata, bright blue or pink bells; Cortusa Mathioli grandiflora, and Geum miniatum, Polemonium himalayense (vote of thanks) were well shown. The Roses comprised the new Lady Alice, bunches of Maréchal Niel, and plants of the new Fairy China Rose, Red Pet. Mr. Gordon, The Nurseries, Twickenham, had a large group of Japanese Maples and Pæonies (silver medal), and R. H. Alexander, Esq., Gifford House, Rochampton (gardener, Mr. Springthorpe), had a group of Calceolarias.

Messrs. H. Cannell & Sons, Swanley, showed forty plants of Calceolarias, compact healthy plants, very dense and healthy, the flowers large, well formed and of rich varied blooms. (Silver medal).

Messrs. Kelway & Son, Langport, Somerset, exhibited nine boxes of single and double Tree Pæonies, very fine blooms, varying from the palest to the deepest colours. (Silver medal).

Mr. John Forbes, Hawick, N.B., exhibited a large collection of Pansies, representing many very handsome varieties. (Bronze medal).

Mr. Duffield and Mr. J. Hall, Cambridge, exhibited Carnation flowers (vote of thanks), and Mr. W. H. Scott, Nunfield, sent a plant of a good variety of Odontoglossum Andersonianum. (Vote of thanks).

CERTIFICATED PLANTS.

Disa racemosa (Royal Gardens, Kew).—This Orchid is also known as Disa secunda. It is a South African species, with tall spikes of large bright rosy flowers, the upper petal hollowed and partly surrounding the lip.

Aerides Fieldingi alba (Baron Schröder). — A fine pure white variety of a well-known Orchid.

Prostanthera lasianthos (C. Ross). – An old plant that is very seldom seen, though it was well grown at one time. The slender branches are furnished with narrow lanceolate leaves, and clusters of white woolly flowers spotted with purple in the throat, like a small edition of a Catalpa.

Alsine verna plenissima (Froebel). — Diminutive white double flowers on a little grass-like tuft.

Rose Sappho (Wm. Paul & Son).—A hardy Tea Rose which we have previously noted.

Anguloa intermedia (Veitch & Sons).—A hybrid between A. Clowesi and A. Ruckeri, the flower of moderate size, creamy and blush, with numerous pink spots.

Epidendrum James O'Brien (Veitch & Sons).—A hybrid between E. erectum, purple, and E. rhizophorum, brilliant scarlet, the resulting colour being a kind of rosycrimson, quite intermediate in tint, and much like rhizophorum in size and shape.

Cypripedium bellatulum (H. Low & Co.).—A grand Cypripedium of the C. Godefroyi type, but much superior to any variety yet seen. The flowers on an imported plant were 2½ inches across, white or creamy, heavily spotted with crimson maroon, the petals broad and finely shaped. Dried flowers are said to have been obtained 4½ inches in diameter.

Abutilon vitifolium (Kelway & Son). – Shown as a half-hardy shrub, the leaves evenly triangular in outline, the flowers pure white, 2 inches in diameter.

Tree Peony Prince Albert (W. Gordon).—A large-flowered single variety, bright crimson, very showy.

Arnebia echioides (Paul & Son).—A fine pan of this beautiful and well known plant was shown, the flowers large, bright yellow spotted with maroon between the lobes when first expanding, afterwards fading.

Caladium Comte de Germiny (J. Laing & Sons).—A dwarf compact variety, leaves bright red with a few silvery spots.

Begonia Princess Maud (J. Laing & Sons).—A double Tuberous Begonia with beautifully formed flowers, pure white.

Begonia Baroness Rothschild (J. Laing & Sons).—A single Tuberous Begonia with well shaped flowers, white centre, edged deep crimson.

Haberlea rhodopensis (Royal Gardens, Kew).—A dwarf plant from Macedonia, like a Ramondia in habit, but with tubular Streptocarpus-like flowers, about 1 inch long, the tube purple, the limb of five lobes, pale nearly white. They are borne in small trusses of three or four flowers each.

MELONS AND CUCUMBERS AT CARDIFF CASTLE.

"A Tourist" when describing the noted gardens at and surrounding Cardiff Castle, incidentally alluded to my visit at about the same time as he was there, and although forestalled by him to a certain extent, it was yet left for me to describe our friend Mr. Pettigrew's most successful method of growing Melons and Cucumbers.

Melons, Cucumbers, and Pines are all grown in one large span-roofed house designed and erected by Mr. Pettigrew. This most serviceable structure is 60 feet long, 22 feet wide, and 13 feet high in the centre, is lightly yet strongly constructed, supported by iron pillars, and very effectively ventilated. A central pit, probably about 10 feet wide and well heated, is devoted to fruiting Pines, and a grand lot there were ripening off in October—Queens, including Mr. Pettigrew's favourite Ripley selection and Moscow Queens, plenty of them weighing 6 lbs., and Smooth Cayennes still heavier. Between the walks and front walls other narrow well-heated pits are formed, and it is in these that the Melons and Cucumbers are grown. Nowhere else probably are less pains taken with the compost for Melons, and nowhere else are better crops grown. In the narrow pits just mentioned a depth of about 18 inches of the best loam available (and that as far as I could learn is poor and void of fibre) is firmly packed. Sometimes much of the old soil is used, a little fresh being added to enliven it up somewhat. As a matter of fact very little importance is attached to the compost, the aim always being to encourage a constant and brisk root action, no drying off being ever thought of. Strong plants are put out 4 feet apart, and the stems at once enclosed with an earthenware collar about 8 inches in diameter and 2 inches deep, the bottoms being rather wider than the top. Two squares of glass are cut so as to fit over these and neatly up to the stem, and with the aid of this capital invention Mr. Pettigrew can safely defy the much-dreaded canker. Most practical gardeners are aware that Melons are very liable to canker at the collar or portion of stem just above the ground, too much moisture being the principal, or it would appear the only cause of this. Nothing is more annoying to a cultivator than the loss of a plant, or it may be a whole row of plants, just when a fine crop of fruit is swelling off. Our remedy for this is high planting and careful watering, a little mound of soil about the stems being kept as dry as possible. At Cardiff Castle, however, it is almost impossible to wet the soil about the stems; at any rate, if ordinary care is exercised. These collars or rims are, I believe, made specially for Mr. Pettigrew, but it is a pity so excellent an idea cannot become general property.

Each plant is taken up with a clear disbudded stem up to the trellis, and they are then trained unstopped up the roof, the laterals being laid in right and left and stopped at the second or third joint beyond the fruit. Afterwards they are only stopped occasionally beyond fruit, or where necessary to avoid crowding, and are allowed to extend about 9 feet up the roof. One or more fruit are set on them as soon as possible, others at intervals, or according as the plants are capable of swelling them off. In this manner a succession of fruit are obtained on each plant. Any time during the Melon season fully grown or nearly ripe fruit, and more in various sizes, down to those newly set, may be seen at Cardiff Castle on the same plants, this being more like Cucumber than Melon culture. Water is given freely as well as liquid manure whenever the borders are at all dry, and I noticed a mass of fibrous roots on the surface. The fruit are early and simply supported and cut before they crack badly, their full flavour being developed on a warm, dry shelf. I do not remember which are Mr. Pettigrew's favourite Melons, nor is this very material, as all varieties are amenable to the same treatment.

Cardiff Castle, raised by Mr. Pettigrew, is the only variety of Cucumber grown in the garden, and anything better for private places it would be difficult to find. It possesses a good constitution, is very prolific at all times, and the quality of the fruit is of the best. As a rule the fruit scarcely average 12 inches in length, and if only they could be generally grown as long as the Telegraph it would also become a favourite with market growers. With this again very little trouble is taken, the plants keeping in good health and very productive when rooting for many months in the comparatively small amount of loamy soil just alluded to. A high temperature is naturally maintained if only for the Pines, and plenty of head room coupled with the good attention the house receives at the hands of the Messrs. Pettigrew and Son does the rest. Altogether this mixed fruit house is much above the ordinary level of similar structures, and worth a long journey to see.—W. Iggulden.



—— The Weather.—"B. D.," writing from Perthshire, says:—"The weather has been warmer during the past week, with a good deal of rain. On the 18th and 19th a severe thunderstorm visited many parts of the country, bright warm weather following." To this we may add that after the steady downpour on Thursday last in London two or three very warm or rather hot days were experienced, since which the weather has been somewhat dull and cold, with frost on one or two mornings.

—— The Gardeners' Orphan Fund.—It has been decided that the Promenade Fête in the Covent Garden Flower Market on behalf of this Fund will be held between the hours of nine and twelve on Wednesday evening, June 6th, and that Messrs. Deal, Dickson, Assbee and Richards be appointed to carry out the necessary arrangements.

—— The death is announced of Mr. Francis Rauch, Inspector of the Imperial Gardens, Laxenburg, in Lower Austria, which occurred on the 13th inst. When a young man he and his brother were both engaged by the late Mr. Loudon, and both being excellent artists as well as good botanists, they contributed very materially in the production of the works upon which Mr. Loudon was at the time engaged, especially the "Arboretum et Fruticetum Britannicum."

—— MAIDENHEAD HORTICULTURAL SOCIETY.—We are requested to state that in consequence of the death of J. Hibbert, Esq., the President of this Society, the annual Show on August 16th will not be at Braywick Lodge as announced, but in the grounds of Ray Lodge, Maidenhead, by kind permission of Miss Lassell.

—— WAKEFIELD PAXTON SOCIETY.—At a recent meeting of this Society, Mr. T. Garnett, gardener to Miss E. G. Mackie, and one of the Honorary Secretaries, read a very interesting paper on "Some Peculiarities of Climbing Plants," which he read before the members of the Naturalists' Society some time ago, and it was most attentively listened to. A short discussion ensued, in which Messrs. Waite, Cordon, and others took part. Mr. B. Whiteley proposed a vote of thanks to Mr. Garnett for his essay, and said that he did not know anyone who had done so much to promote the success of the Paxton Society as Mr. Garnett. The motion was supported in very eulogistic terms by Mr. Thomas Senior, solicitor, a former President of the Society, and was heartily carried.

—— SEEDS FOR SONG BIRDS.—Messrs. James Carter & Co. desire us to state that they have made arrangements for supplying the bird-loving public with seeds in packets of various sizes. One of these has been sent to us; it is very attractive, and we doubt not the contents are, as represented, excellent for the purpose in view.

—— HOOPER & CO., LIMITED.—At the annual general meeting of Shareholders in this Company recently held, the Chairman, C. Adams Hooper, Esq., explained that, as shown by the accounts, the business of the Company was in a highly efficient and satisfactory condition, that after deducting all the salaries and expenses of management there remained a net profit upon the capital of the Company for the six months ending December 31st last of about 9 per cent., and recommended that a dividend at the rate of 6 per cent. per annum should be declared, the remainder being carried forward. After a few remarks from Shareholders present, approving of this proposal, a resolution was unanimously passed that such a dividend should be paid within fourteen days. The old-established business of Messrs. E. G. Henderson and Son, with the Pine Apple Nursery, Maida Vale, is now the property of the Company, of which Mr. Henderson is a Director; also the wholesale seed business of Mr. James Farrar, formerly carried on at Primrose Street, Bishopsgate; a branch establishment is to be opened in Paris, and another shop is secured in connection with the present one in the Central Avenue of Covent Garden Market.

—— ROYAL METEOROLOGICAL SOCIETY.—The usual monthly meeting of this Society was held on Wednesday evening, the 16th inst., at the Institution of Civil Engineers, 25, Great George Street, Westminster; Dr. W. Marcet, F.R.S., President, in the chair. Mr. J. W. Gatwood and Mr. N. Simmons were elected Fellows, and Prof. D. Calladon an honorary member of the Society. The following communications were read:—1, "Report of the Wind Force Committee on Experiments with Anemometers conducted at Hersham," by Mr. G. M. Whipple, B.Sc., and Mr. W. H. Dines, B.A. A whirling apparatus with arms 29 feet radius was rotated by means of a small steam engine. On the arms of the whirler four different anomometers were placed. Each experiment lasted fifteen minutes, the steam pressure remaining constant during the run. For the Kew Standard Anemometer, with arms 2 feet long, the experiments give a mean value for Robinson's factor of 2·15, and for two smaller instruments the factor is 2·51 and 2·96. Mr. Dine's Helicoid anemometer gave very satisfactory results, the mean factor being 0·996. 2, "On the Measurement of the Increase of Humidity in Rooms by the Emission of Steam from the So-called Bronchitis Kettle," by Dr. W. Marcet, F.R.S. The author described a number of experiments which he had made by steaming a room with a bronchitis kettle, and ascertaining the rise and fall of the relative humidity from readings of the dry and wet bulb thermometers. He found that the air in the room could not be saturated, the relative humidity not exceeding 85 per cent.

—— MR. W. SMITH writes from Nantwich—"Have any of the readers of the Journal noticed the habits of the little migratory bird known as the WHITE THROAT? I have been very much amused with a pair of them during the past week in what was to me quite a new feature in their habits, although I have noticed their annual migrations from childhood, and am now grey with age. Here, in the country, in Cheshire, every homestead is fringed with Damson trees seen in the landscape at great distances by their pure white blossoms. It is on some of these trees that I have seen these little birds 'gathering honey from every opening flower.' At first I could scarcely believe my eyes, I thought they were insect-hunting; but no, they were sipping nectar. They put their bills carefully into the centre of each flower and held it there a second or so, then off they went to another. This was to me amusement blended with instruction, for I concluded that they acted as fertilisers of the flowers."

—— WE are informed that the extensive collection of FLORISTS' TULIPS grown by Messrs. E. H. Krelage & Son at Haarlem, Holland, will be in bloom towards the end of the present month and early in June. The beds, which comprise an area of 7000 square feet, will be protected, and persons who are interested in these handsome flowers are invited to inspect the display. We are also desired to state that at the same time may be seen a collection of "one-coloured breeders unrivalled for variation and brilliancy of colours. These varieties have not yet been sold, but eventually some of them can be offered to the public. Here are represented in colours, ranging from pale porcelain to the darkest violet, from soft rose to the most brilliant red, from light brown to glossy black. These Tulips have very large well-formed flowers borne on strong stems. Grown in quantity they would give to our gardens a new feature at a time when striking colours are so much wanted. The black and the darkest red shades in this collection are really unique, and seem to be of great horticultural value."

—— GARDENING APPOINTMENT.—Mr. W. Gibson, for the last three years foreman at Farington House, near Preston, has been appointed gardener to H. Harris, Esq., Steventon Manor, Micheldever, Hants.

—— ARTIFICIAL MANURES.—"R. H." writes:—"I wish to congratulate your correspondents on the way they have both conducted the discussion on the above subject, and I hope they will continue the controversy, as will be convenient to themselves. I am greatly interested in it, and have no doubt many more will benefit by it."

—— THE schedule of THE HULL AND EAST RIDING CHRYSANTHEMUM SOCIETY has just arrived, and announces that this year's Show is to be held in the Artillery Barracks, Park Street, Hull, on Thursday and Friday, November 22nd and 23rd. Liberal prizes are provided in forty-seven classes, including another 15-guinea challenge cup and £15 as first prize in the class for forty-eight blooms, twenty-four incurved and twenty-four Japanese, not less than eighteen varieties of each. With regard to this cup a change has been made in the conditions. It has to be won only twice now, not necessarily consecutively, to become the property of the exhibitor, instead of twice consecutively, or three times altogether, as with the cup competed for last year and previously.

—— PROFESSIONAL GARDENERS' FRIENDLY BENEFIT SOCIETY.—A large gathering of the above Society was held at the "Green Dragon Hotel," Guildford Street, Leeds, on Tuesday, the 15th May, for the purpose of presenting a testimonial to Mr. Wm. Sunley, the Society's able Secretary, who for the period of twenty-one years has held that office. The meeting was presided over by the President, Mr. James Inman, the vice-chair being occupied by Mr. William Harrison, the Vice-President. After the Chairman had made the presentation a number of the members spoke of the great services rendered by Mr. Sunley, and attributed the present splendid position of the Society to be due in a great measure to him. One of the most pleasing features of the evening was to see Mr. Sunley and the Treasurer of the Society, Mr. Thomas Jamieson (who has held that position for twenty-one years) shake hands over the table and say for the whole of that period nothing had arisen to cause any misunderstanding between them. The testimonial consisted of a beautiful timepiece and pair of ornaments supplied by Mr. Dyson of Briggate, and an illuminated address prepared by Mr. Massey, Printer, Upperhead Row. Amongst the gentlemen present were Mr. R. Featherstone, nurseryman; Mr. S. May, Mr. Wm. Green, and Mr. J. R. Beckwith, seedsman. A most enjoyable evening was spent.

BELVOIR CASTLE GARDENS.

EVER since reading an account of these gardens by the "oldest correspondent" of the Journal, "D., *Deal*," I have had a lingering desire to see them, and at last have had an opportunity of gratifying my thirteen-years-old wish, for on referring to my encyclopædia of gardening in the

form of eighty half-yearly volumes of the *Cottage Gardener and Journal of Horticulture*, I find the descriptions to which I refer were the result of a visit towards the early part of May, 1875. My run down to Belvoir was in the early part of May, 1888, and it came about in this way. Not long ago, as some readers may remember, a provincial nurseryman prevailed on me to introduce him to the Homes of Flowers and of Fruit, Messrs. Cannell's and Mr. Ladds' establishments at Swanley. So pleased was he with the day out, and feeling himself, as he intimated, somewhat indebted to me, like an independent man that he is, began casting about to see in what way he could be level with me, and get out of my debt. Of course, he was never in it; but that was his way of putting the matter, and it suited me very well. My friend, travelling somewhat widely, and having many good friends, including the Duke of Rutland's talented gardener, Mr. W. Ingram, I had a summons to arrive at Grantham Station at 9.15 A.M., on, as it proved, a bright May morning, and I should be met and escorted to Belvoir. But how was that to be done? The 7.40 A.M. from King's Cross does not stop at Grantham, and to cross ten miles of London and reach the Great Northern Terminus at 5.15 in the morning was no joke to a late riser and bad walker; but I had to be at Grantham all the same at the appointed time. One of those happy thoughts that seem occasionally to be born to the lame and the lazy came to the rescue, and an inner voice suggested, Why not go down to Peterborough the previous afternoon, see the Conifers at Orton Longueville, spend the night with Mr. A. Harding there, and go on by the 8.30 in the morning, which is due at Grantham exactly at 9.15? The plan was carried out, and we measured trees, and had a very good time in the garden till the nightingale's trill interrupted the work. How the measuring was done, with the heights determined, will perhaps be told another day. We must first go to Belvoir.

The drive from Grantham is seven or eight miles; that is the aristocratic way, and leads through a pleasant district to the front entrance to the Castle; but as we were not aristocrats, and as the Nottingham train was waiting, we went on to Redmile, a seventeen minutes' journey, and entered the demesne by the back door, so to say, after a drive I was told of two miles, but I think a pedestrian would vote them long ones. The route is through a flat country, the Vale of Belvoir, across which the north-east wind rushes keenly in spring, retarding the growth of the grass and the trees. It is a cold late tract of land, and the outlook somewhat dreary, but when we mount the hill on which the Castle stands and descend the southern slope, which is further protected by a thick hanging wood, the change is almost startling. It is winter on one side the promontory and the trees leafless, summer on the other, with Rhododendrons blooming and flowers, flowers everywhere; borders filled with them, beds crowded to overflowing, rocks sparkling with colour; and as the sun streamed through the trees, and the shadows waxed and waned from fleeting clouds, the scene was enchanting. And all this done for the gratification of one man—the Duke! No, it was done by the Duke and Mr. Ingram, as a work of pleasure to them no doubt, but the beauty to be shared fully, freely, and every day without let or hindrance by the people. No wonder the ducal family is popular in the neighbourhood and for miles around. But I am going too fast, and had better begin at the beginning.

Mr. Ingram received us with great courtsey, and soon made us at home in his embowered residence; and it is a treat of no ordinary kind to spend a few hours with a gardener who has travelled so far, and whose attainments are so widely recognised. As a geologist he may fairly be described as the leader among gardeners, and he appears to be as conversant with what is beneath the soil and the disposition of the strata almost everywhere as with the vegetation on its surface. His knowledge of the science of rocks and soils has been of no small value, both in the formation of rockeries and the arrangement of plants and trees, as well as culturally. In the creation of his effects and the conduct of its work he does not grope his way experimentally, but goes direct to his object. No grotesque conglomerations are perpetrated in the formation of "rockwork" on the slopes which constitute the attraction of the place, but he hides his art in the close alliance with Nature. When he prepares mounds for alpines for their culture solely, he aims not at the picturesque, but considers their requirements. There are examples of what may be said to be the useful and also of the ornamental in rockery mounds, both answering their purpose, the former unpretentious and agreeable, the latter equally unpretentious, yet imposing.

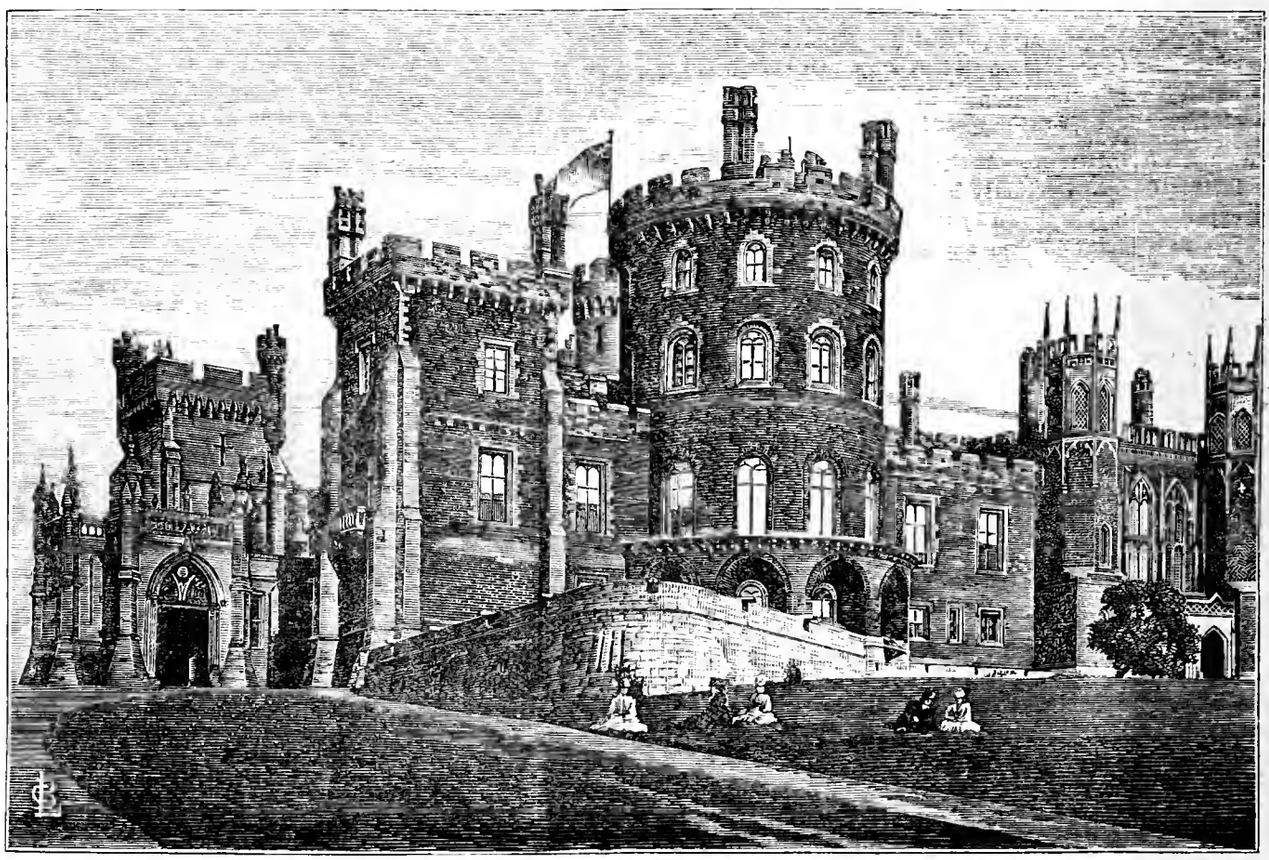


FIG. 56.—BELVOIR CASTLE.

We first enter the home garden, an enclosure of an acre or two in front of the chief range of glass. This is a fine type of an herbaceous garden of the olden time. The space is occupied with beds of varying length and about 4 feet wide, the level expanse being broken here and there by elevations for alpines. The species and varieties of border and alpine plants are very numerous. Many old familiar kinds are there, and others less familiar, but all appropriate to their positions, each in turn revealing its attractions, and the whole rendering the garden interesting, and more or less beautiful, according to the season, all the year round. Here is a rough jotting of a few plants just as we find them, and they fairly represent the diversity of the garden. Each has space for displaying its character, while the strong are not allowed to overrun the weaker and crush them out of existence in an unequal struggle for supremacy:—

Doronicums austriacum and plantagineum; Pyrethrums, double and single; Chrysanthemums triptens, fine for summer and autumn blooming; Alyssums saxatile and argenteum; Pinks, Cloves, and Picotees in great variety; Campanulas Hendersoni, glomerata, and G. F. Wilson; Anemones stellata, blanda, apennina, Robinsoniana, very beautiful; Morina longifolia; Eryngium giganteum; Phlox frondosa, Nelsoni; Erigerons macranthum and grandiflorum; Erysimum pulchellum; Pæonies in variety; Delphiniums Belladonna and nudicaule; Lychnis

chalcedonica fl.-pl., and L. viscosa fl.-pl.; Irises corifolia and semperflorens; Megaseas purpurascens and ligulata; Irises ochroleuca, stylosa, and pumila varieties; Polemonium azureum and Richardsoni; Violas in variety; Orobus vernus; Sedum spectabile; Rocket (Hesperis); Geum coccineum; Centaurea montana; Achillea ptarmica; Physalis alkekengi; Gypsophila paniculata; Galax aphylla; Onosma taurica; Statices, Trilliums, Alstromerias, and Narcissuses. This list, a fragment of the whole, and representing the mixture, gives an idea of this interesting garden.

On one of the rockery mounds the following plants are thriving, showing how well they are adapted for exposed elevations, and that they find the essentials for their growth. The mounds are in three tiers, or the top and two ledges:—Upper part—Campanula soldanella plena, Coronilla iberica, Origanum pulchellum, Dianthus superbus, Veronica solanifolia, Dentaria polyphylla, Lithospermum prostratum, Dianthus deltoides alba. Second ledge—Ranunculus amplexicaulis, Dianthus cinnabarinus, Hutchinsia alpina, Primula hirsuta, Viola alpina, Anemone stellata, Dianthus neglectus, Androsace lanuginosa, Dianthus Seguieri, Sedum causicum, Dryas octopetala, Anemone Robinsoni, Dianthus Candolleana, Thymus montanus albus, Androsace lanuginosa, Saxifraga Macnabiana. Third or bottom ledge—Androsace coronopifolia, Aralia matter of right and by force of habit, unthinkingly essayed to cross the lawn, whereupon a loud protest arose against the transgression, and they were put into their proper place forthwith. They apologised for the momentary forgetfulness, and did not offend again. On Mr. Ingram speaking to the Duke the next morning of the exemplary conduct of the people, His Grace expressed his pleasure, remarking he "understood the only offenders were Lady Adeliza and Mr. Ingram."

Passing the Castle, as it is seen in fig. 56, on the right, the walk curves along the side of the hill on the extremity of which the building stands. The great ridge of rocks, which at some far past period rose out of the sea, are somewhat horseshoe-shaped, and clothed with timber, as they have been for generations; on the north and west side—the outer rim of the shoe—densely, forming a wood; along the inner curve, from the west almost round to the east, the trees have been thinned, and under them the great slanting, and in places almost precipitous, bank is studded with flowers. Daffodils and others suitable for establishing in the grass and clefts of rocks have been planted annually, and the effect of this steady persistent work of years is precisely as if the flowers had crept onwards by natural increase right along the slope for about a quarter of a mile. The walk along the declivity bends about, as paths usually do along steep hillsides. Honeysuckles, wild Clematis, and



FIG. 57.—THE PLEASURE GROUNDS.

Veitchiana, Draba helvetica, Erinus alpinus, Gentiana verna, Cyclamen Coum vernum, Androsace Laggieri, Lychnis alpina, Primula formosa, Saxifraga oppositifolia, Sanguinaria canadensis, and Alpine Auriculas. Sempervivums and Sedums fringe the supporting rock.

Twisting walks between shrubs lead from this garden to the walks, beds, and slopes in the pleasure grounds, from which not even a gate bars the way to whoever may desire to enter them. During all hours of daylight on Sundays and week days the public have free access, and they can rest on the green banks or wander about at will enjoying a combination of arboreal, floral, rugged, and pastoral scenery such as it is rare to find associated, and almost blended, for one merges into the other in a manner that it would puzzle even Mr. Ingram to draw lines of demarcation. Excursionists come from the busy towns of the midlands and the north to the number occasionally of 4000 or 5000 at a time. They are not watched by keepers nor directed to go this way nor that, but are simply trusted, and the knowledge of this has the effect of transforming them for the time being into guardians, and it is rare indeed to find the sprig of a tree broken or a flower plucked from the thousands they could so easily stoop and gather. It is only under exceptional circumstances that notices request visitors to keep on the walks, such as immediately after a torrent of rain, when an army of sightseers rushing up and down the lawn, for there is not much of it level, would soon do serious damage, and it is the rule to allow the utmost possible latitude to all comers. As evidence of the respect accorded to the expressed wishes of the nature mentioned Mr. Ingram recalls an amusing episode. Walking round with one of the ladies of the Castle, and mixing with the crowd unknown, they, as a other appropriate rambling plants are arched over here and there in rustic fashion. Flights of a few steps in different places conduct from the higher to the lower levels, and each of these descents are flanking banks of Violets—an excellent idea, well carried out. The air is fragrant with them in the spring, while right and left and ahead, looking along and across the curve, masses of bright spring flowers are seen everywhere glistening between the trees.

Only near the Castle the lawn is kept smooth like velvet, the grass in the pleasure grounds being mown much less frequently, as extreme trimness there would be out of character, and too "cockneyfied" for the natural grandeur of the surroundings. Near the Castle are beds quite cushioned with spring flowers—Myosotis, Aubrietias, Anemones, Arabis, Saxifragas, and Mr. Ingram's ennobled Oxlips, that stand out bright and clear from the surrounding cushions of contrasting colour. A little further we come to another group of beds, and a plateau of gravel surrounded by evergreens equally gay but not formally planted. Some weeks ago they were bespangled with Winter Aconites, with Hellebores pushing above them; then in turn come other bulbs, such as Hyacinths, Tulips, and Narcissus, rising above and between dwarfer spring flowers such as those above mentioned, and others that are in beauty during the spring months. Beyond this we come to more freedom in arrangement and less trimness, the garden gradually merging into a beautified wood on the right upwards, and on the left downwards receding and melting away to the flat, pastoral, tree-studded country that stretches away southwards, where the wild waves in remote ages washed up and left their *debris* on the beach, where the rocks grew and subsequently the trees and flowers. When it is stated that the tops of the forest trees in

this old sea bed are far below the roots of those on the bold protecting semi-circular range, it will be understood how sheltered the position is, and suitable for early spring flowers.

In their disposition the natural configuration of the ground has been steadily kept in view, and to this all arrangements have been subservient. In one place they recede into the hill on the right, a portion of which has at some time fallen away to make room for them; in another they fall away into the lower ground to the left, as if they had ridden off on a landslip; indeed, some of the mounds that recede into the lawn below are landslips turned to account, and here the geological knowledge of Mr. Ingram has been displayed, for by the lack of it Nature could not have been followed with such fidelity, rock building would have been overdone, and incongruous heaps piled up unmeaningly. In some places the soil has been upheld, forming terraces with beds on the sloping ground below. This is somewhat gardenesque, the link, so to say, between the smooth and trim at one end of the promenade and the wildness at the other. But the terraced portions look more pleasingly irregular now than when the sketch (see fig. 57) was made. The work was new then, but mellowed with age now, and the sharp edges worn off; besides, as "D., *Deal*," hoped it would be, there has been an extension of the free and more natural in planting and a restriction of the formal, and he would be delighted with Belvoir now. The sketch was obtained by him and the engraving introduced in the following words, and I can imagine no others more appropriate—"One likes to linger on these slopes, and the clever sketch by Mrs. Ingram, who is an artist of no slight merit, will give some idea of the situation; and as one stands on the upper portion and looks down on the carpet of green, backed by the feathery growth and elegant foliage of the Birch it is hard indeed to tear oneself away; but beautiful as the combinations of flowers were, the wilder and more natural portion of the garden pleased me most." So it did me, and, as I have said, it is that which Mr. Ingram is extending. Apart, however, from individual proclivities in that respect, the talents of Mrs. Ingram must be recognised. They are even more evident in her combined studio and drawing room, her landscape, architectural and animal paintings all commanding attention by their undoubted merits. But to return to the garden. To enumerate the plants employed by Mr. Ingram in furnishing the beds and on the rockery mounds and slopes were to form a catalogue of all that are suitable for the positions. For massing from 8000 to 10,000 Aubrietias are planted, and as associated with the large-trussing early flowering lemon and yellow Belvoir Oxlips, the effect is admirable. The Belvoir Yellow Wallflower is practically supplanted by the Oxlips, these being hardier, earlier, and more lasting. Aubrietias are a great feature at Belvoir, where most or all the species and varieties are grown, while others of great decorative value have been raised from seed—one, a rose tinted form of A. græca, being particularly attractive. But the most attractive of all is A. Leichtlini, which was received from Mr. Max Leichtlin in return for some sent to him by Mr. Ingram, and will be referred to again.

Besides or among the plants previously mentioned as typical of the Belvoir collection a few attracted attention—namely, Vesicaria utricularia, resembling an Alpine Wallflower, and Androsace coronopifolia, a gem of a plant with lax umbels of small white flowers; Cardamine rotundifolia, white, early and graceful; Oxalis Acetosella, the blue variety in lovely tufts; Narcissus Leedsi Duchess of Westminster, the queen of the collection; Saxifragas cymbalaria and peltata, Tiarellas, Edelweiss, and Alpine Daisies that are so suitable for rockwork, up some of which we clamber and find at the top the "last tree" that is found in northern latitudes on the way to the North Pole—Salix herbacea. Flattened by the snow for ages the tree retains its prostrate form in temperate climes. Its upright growths are only a few inches high, and at a few feet distance one of the "trees" reminds of a mass of Creeping Jenny. Mr. Ingram brought it from Greenland's icy mountains, indeed many plants at Belvoir were collected by him in different parts of Europe. But as we have got to the "last tree" it is time to depart, and in doing so across the lower grounds we find Camellias growing and flowering as they have done for years, also a fine specimen of one of the Indian Rhododendrons, perhaps R. Falconeri, with huge clusters of buds. And what can this Vanilla-like perfume come from that pervades the air? It is from the elegant Box-like bush or tree that stands on the open lawn, Azara microphylla; and as we pass under it and look upwards we see myriads of yellowish miniature flowers in the axils of the leaves. This evergreen was sent out a few years ago by Messrs. Veitch & Sons, and is usually grown against walls. The Belvoir specimen is much the finest I have seen in the open, and is worthy of the position it occupies.

We have a rush through the houses in which very old Vines bear in abundance Grapes of superior quality, a peep into half a dozen plant houses, a walk down the fine kitchen garden, in which Potatoes are earthed at the time of planting by being laid in in rows on the ground and ridges of soil taken from between the rows and piled over them—the best plan with cold strong land; a look into the reserve ground, where Mr. Ingram makes worthless clay land fertile in a year or two in the same way that Nature does in a thousand, for he spreads on the surface leaves and all kinds of vegetable refuse a foot or two thick, covers it with soil, and soon has a rich mass of what plants like, and in which Primroses and others grow luxuriantly. This is an instance of Art improving Nature with the best results. The garden walls are well covered with trees, including Peaches, which ripen good crops, as they might in hundreds of other gardens where "they cannot be grown now." Growing Peaches on open walls bids fair to be a lost art at no distant date, but there are a few gardeners left who retain it and grow good crops further north than Leicestershire. There are useful orchards, and Mr. Ingram advises all who want fine standard Apple trees and plenty of good fruit to plant Bramley's Seedling. Excellent accommodation is provided for young men in the gardens, with incentives for improvement, and Mr. Ingram is proud of the good positions some of his pupils have obtained in various parts of the world. And now I wish to record my obligations to all—guides and entertainers—who contributed to the pleasure of the day—a few hours spent in such good company in such a fine garden being a real treat to—A LONDONER.



ROSES IN WINTER.

WHEN plants have to be raised for winter flowering a start cannot be made too early in the season, provided growers have no young plants on hand to commence with. Moderately young wood in a half ripened condition will strike freely if inserted amongst sand in pans or pots and covered with bellglasses. The cuttings only require two joints, none of the foliage need be removed, and the top eye only left above the sand. Insert them directly they are severed from the plant, well water, and place them in a temperature of 65°. If gentle bottom heat can be given them all the better, but it need not exceed 10° higher. In three weeks they will be rooted, and should be placed singly in 3-inch pots in a compost of loam and leaf mould in equal parts with a liberal quantity of sand added. The varieties before named do well on the Briar, but are preferable on their own roots, because they throw up more freely from the base, Niphetos excepted, for it is a weak grower. If the stocks are grafted at home they should be housed some time before the operation is performed to induce activity of the roots and the sap to flow freely. When in this condition cut them down as closely to the rim of the pot as possible, and the scion, which need only possess one eye, should be securely tied on. Take care to fit as nicely as possible the slanting cut on the scion with that on the stock. They can be rubbed over with grafting wax, or a little clay rubbed in with the finger will do equally well. Neither is absolutely necessary. Then place them in a close house, or better still in the propagating frame, where they can be kept close and moist until the stock and scion are united. When this takes place the scion soon begins growing, and care is needed in hardening the plants to bear full exposure in a structure having a temperature of 60° to 65°.

In a few weeks from the time of grafting they will be ready for placing in 5-inch pots, and in doing so bury the union of the scion and stock so as to give them a chance of emitting roots from the junction. They will do this with much greater freedom when they are buried early after grafting than if the greater portion of the season has elapsed before it is done. These plants, as well as those on their own roots, should be grown on under warm conditions until the end of June, when they may be gradually hardened to cooler treatment, although they should be grown under glass the whole of the season. The grafted plants will grow most rapidly at first, and by the time named most of them will be ready for 8-inch pots, while those on their own roots will be much smaller in pots 2 and 3 inches less, and will fill their pots with roots by September.

It may here be mentioned that plants can be purchased directly they are grafted, or when placed in 5-inch pots, in which they will be well established by May. After that time strong plants can be had in larger pots. The earliest worked plants are generally shifted, for there is a demand for plants of extra size towards autumn. If purchased in 5-inch pots transfer them into 8-inch, and if grown under glass they will increase wonderfully in size during the next two or three months. Up to this stage all the flower buds as they appear should be removed.

In September it must be decided whether the plants are to be repotted or planted out. Those intending to grow them in pots should place them into others 2 inches larger—that is, those on their own roots into 8-inch, and the worked ones into 10-inch. The balls of roots in potting should not be disturbed further than the removal of the drainage from the base and loose soil from the surface. The soil this time must be pressed a little firmer than was needed during the earlier pottings, the same care being exercised in planting them out, and the soil of the border should be pressed firmly about them. At this stage of the plant's growth the critical may be inclined to ask two questions—First, Would not the potting advised, or planting out, be better postponed until after the turn of the year? secondly, Would not the roots keep better in the smaller pots than amongst a quantity of soil that is unoccupied? Our answer to both questions is, Decidedly not. Keeping the plants in pots they have filled with roots will quickly bring both the roots and growth of the plants to a standstill, which is not desirable. Our object is to keep them growing freely for at least a month or six weeks after planting them out, so that they will become well established in the border or pots ready to make a vigorous growth early in the season. The roots will remain in better condition, because we do not intend them to be inactive during the whole of the season, and there is not the slightest fear of their not remaining fresh and healthy provided those in charge do not saturate them with water.

The house must be kept close for ten days or a fortnight after the Roses are potted or planted out, and during the remainder of the season should be shielded from cold by closing the house early and applying heat when needed to keep a temperature at night of 55°. Fire heat is very rarely needed until the end of October, and often not for some short time afterwards; but this is a matter that depends entirely upon the weather. Those on their own roots will now appear to make the greatest progress, and frequently towards the end of October they commence throwing up strongly from the base.

After the beginning of November any blooms that the plants show may be allowed to expand, for I have never observed that it does them any harm. From young plants of this description I have frequently had a good supply of useful buds up to Christmas, but for the purpose in view the plants should not be encouraged to produce flowers after the beginning of December. They should have three weeks' or a month's cool treatment towards the close of the year. The last growth should harden fairly well before this is attempted; in fact, the plants will show signs of standing still, and when this takes place cool airy treatment should be given them. Frost should be excluded, so that the whole of their foliage can be preserved uninjured, which will insure the roots remaining active.—WM. BARDNEY.

(To be continued.)

BATH SPRING SHOW.

MAY 16TH.

THE second of the series of five shows annually held at Bath took place in the Sydney Gardens, and on the whole was a very successful meeting. Unfortunately the weather was far from being favourable to the full enjoyment of an open-air "floral fête," a few cold showers having the effect of keeping many visitors away. Two very large tents and two smaller ones were fairly well filled with the various exhibits, plenty of room being allowed, as usual at Bath, for promenading.

STOVE AND GREENHOUSE PLANTS.—In the classes open to him, Mr. Cypher, Cheltenham, was simply invincible, his most noteworthy exhibit being in the class for twelve plants, these being of unusual excellence even for him. The best nine flowering plants were staged by Mr. W. Long, gardener to C. Gardiner, Esq., Brislington, among these being well-grown specimens of Pimelea decussata, Erica Cavendishi, Clerodendron Balfourianum, Azalea Bernhard Andreas alba, and Anthurium Schertzerianum. Mr. H. Jones, gardener to Canning Doherty, Esq., Bath, was a creditable second, his best being Erica Cavendishi, Bougainvillea glabra, Rhyncospermum jasminoides, Hibiscus striata, Genetyllis Hookerianum, and Rhododendron Gibsoni. Mr. G. Tucker, gardener to W. P. Clark, Esq., Trowbridge, was third with rather small plants. Mr. J. F. Mould, Pewsey, was well first for six specimens; Mr. C. H. Keel, gardener to Col. Landon, second; and Mr. W. C. Drummond, third. In the class for a single plant Mr. J. Cypher was placed first with an immense and grandly flowered Pimelea spectabile, and Mr. Long second with a good Anthurium Schertzerianum. The best four Heaths were staged by Mr. Cypher, these consisting of neat, well-flowered specimens of Ventricosa coccinea minor, depressa, Victoria, and aristata major. Mr. W. J. Mould was a good second. There was only one class for fine-foliaged plants, the prizes being offered for a group of fifteen varieties; Mr. Cypher was easily first, his best being Kentia australis, Cycas revoluta, Cycas circinalis, Kentia Fosteriana, Kentia Belmoreana, Pritchardia pacifica, and Phormium Veitchi variegata. Mr. Curry, gardener to Col. Pepper, Salisbury, was placed second, but ought to have been third, the numerous Crotons included in his group being very indifferent plants; Mr. W. J. Mould was third. Ferns were well shown by several exhibitors, but most of the plants were rather small. The best fifteen varieties were staged by Mr. G. Tucker, among these being creditable specimens of Dicksonia antarctica, Athyrium Goringianum tricolor, Asplenium Nidus-avis, Adiantum cuneatum, and several Gymnogrammas. Mr. W. J. Mould was a good second, and Mr. W. C. Drummond third. Mr. H. Jones was placed first for nine Ferns, these including good plants of Alsophila excelsa, Dicksonia squarrosa, Platilobium rotundifolium, and Adiantum farleyense. Mr. W. Marchant, gardener to Jerome Murch, Esq., was second for a healthy group. Mr. Drummond was first, and Mr. Brown, gardener to C. Baily, Esq., Frome, second for a specimen Fern, both having fairly good Dicksonias.

AZALEAS.—These are always a feature at this Show, but it was generally considered that they are not nearly so well shown as they formerly were, huge specimens having to give way before young plants of superior varieties. Mr. W. Long was first for twelve varieties, having fine freely flowered specimens, about 6 feet high, of such old favourites as Charmer, Mrs. Turner, Roi Leopold, Iveryana, Duc de Nassau, Stella, Criterion, and Souvenir de Prince Albert. A third prize was awarded to Mr. Keel. The best nine specimens were staged by Mr. J. Cypher. Captain Haskett Smith was first for six varieties, Mr. W. J. Mould second, and Mr. W. C. Drummond third; and Mr. Lond first, and Mr. W. C. Drummond second for a single specimen.

ORCHIDS.—A tent was devoted to a display of these, though the competition was not so keen as last year. The best prizes were offered for a group of Orchids arranged for effect, on a space 12 feet by 6 feet, Ferns and foliaged plants allowed. Mr. Kerslake, gardener to the Rev. E. Handley, Bath, was well first, his group being very superior in every way. Various choice Cattleyas, Lælias, Dendrobes, Vandas, Odontoglossums, Oncidiums, Masdevallias, Calanthes, and other Orchids were shown in a fresh condition, plenty of Ferns and Palms serving to set them off to the best advantage. Mr. R. B. Cater also had a very excellent group, in which Dendrobes and Cattleyas were most prominent, and was awarded the second prize. The Rev. E. Handley was the only exhibitor of six varieties, and fully deserved the first prize awarded. This exhibit consisted of a good plant of Odontoglossum vexillarium giganteum with about sixty-five flowers, Cattleya Skinneri carrying twelve strong spikes, a large pan of Cypripedium Lawrencianum, and good specimens of Vanda suavis, Cattleya Mendeli and Lælia purpurata. Mr. Handley was also well first for four varieties, these consisting of Vanda suavis, with two strong spikes; Cattleya Mendeli, carrying six good spikes; Lælia purpurata, with seven spikes; and Cypripedium, with six fine flowers. Sir A. E. Ramsay, Bart., Cheltenham, took the second prize with very creditably flowered plants, Cattleya Mossiæ being especially good, while the third prize went to Mr. W. J. Mould. The last named had the best single specimen, a strong plant of Acrides Fieldingi, with two grand branching spikes of bloom; the Rev. Handley being second with Lælia purpurata, bearing twenty-three beautiful flowers. The Rev. Handley was again first in the class for a new or rare plant, staging a small piece of Cypripedium Sanderianum; the second prize going to Mr. G. Pymm, gardener to Mrs. Gouldsmith, Trowbridge, for Cattleya Mendeli superbissima.

ROSES.—These were particularly well shown, a small tent being fairly filled with them. There were four competitors with a group arranged for effect on a space 8 feet in diameter, pots not to exceed 10 inches. The Rev. E. Handley was first with a capital lot of plants with fine blooms arranged in a circular group. Mr. R. B. Cater was a good second, and Mr. F. Baskerville, Clifton, third. Mr. Handley was also first for six varieties, having fine well flowered specimens of Earl of Pembroke, Mdlle. Thérèse Levet, Merveille de Lyon, Edward Morren, Madame Lacharme, and Souvenir d'un Ami. Mr. Cater followed, his best being La France and Souvenir d'un Ami. The third prize was awarded to Dr. Budd, Bath.

SOFTWOODED PLANTS.—A capital lot of show Pelargoniums were staged, all being remarkably fresh and well flowered. The best nine varieties were staged by Mr. G. Tucker, these consisting of Triomphe de St. Mande, E. Perkins, Virgin Queen, Rob Roy, Beauty of Kingston, Royalty, Mary Mallet, Lady Isabelle, and Digby Grand. Mr. H. Jones followed closely, equal third prizes going to Mr. W. J. Mould and Mr. H. Weston, gardener to Mrs. Wiltshire. Mr. A. A. Walters, Bath, was the only exhibitor of six varieties, and was awarded the first prize. The best six Cinerarias were shown by Mr. M. Cole, gardener to S. Tredwell, Esq., Bath, Mr. W. Burridge being second, and Mr. W. Marchant third. Mr. M. Cole was also first for six good Calceolarias, the second prize going to Mr. W. Robinson, and the third to Mr. G. Tucker.

CUT FLOWERS.—A beautiful lot of cut Roses were shown, but owing to the crush no names could be taken. Mr. R. B. Cater was a good first for twenty-four blooms in twelve varieties, beating the Rev. E. Handley, who took the second prize. The first prize for twelve blooms was awarded to Dr. S. P. Budd, Mr. T. Jolley being second, and Mr. F. Hooper third. Messrs. A. T. Hall and W. Meddick were the prize-winners with Tulips, and Messrs. A. G. Way, E. Dury, W. G. Meddick, W. Meddick, and Col. R. T. Hare were successful with Pansies. The competition with twenty-four varieties of cut flowers was good. Mr. G. Howe, gardener to Lewis Fry, Esq., M.P., had an exceptionally beautiful collection, and was placed first. Mr. W. Fidler, gardener to the Baron de Tuyll, being second, and Mr. W. Pumphrey third. Messrs. Garaway and Co., Clifton, obtained the first prize for a hand bouquet, this being rather a novel arrangement, in which strong spikes of Odontoglossum Alexandræ played a conspicuous part. Mr. C. Winstone was second, and Mr. E. Thomas third. The last-named was first for a vase, and Mr. R. Bush second.

FRUIT AND VEGETABLES.—Strawberries in pots were not so good as usual. Mr. W. Robinson, gardener to Lord Justice Lopes, was first with creditable plants of President, the second prize going to Mr. J. Shelland, gardener to W. Hill, Esq, who had Oscar in fairly good condition, and the third to Mr. J. Watson, gardener to the Rev. C. C. Layard. In the class for a dish of Strawberries Mr. G. Pymm was well first with grand fruit of James Veitch, Mr. W. Robinson being second with President, and Mr. W. Fidler third. Mr. R. Bush was first for a dish of Apples, staging well kept Malakofna, the second prize going to Mr. J. Weston for Wellow Pippin, and Mr. W. Leaney, gardener to W. Ward, Esq., was third with Balchin's Pearmain. A capital lot of vegetables were shown, and of these the best nine varieties were staged by Mr. W. Every, Bath; Mr. G. Garraway, Bath, being a good second. For six varieties Mr. J. Ricketts was first, and Mr. J. Weston second. Mr. S. Tredwell had the best brace of Cucumbers, a fine seedling of his own raising, and named Upland House Seedling. Mr. Robinson was second, and Mr. T. Jolly third. Mushrooms were well shown by Messrs. Pymm and E. Hall, French Beans by W. Robinson and W. Fidler, Asparagus by G. Garraway and J. Long, Peas by G. Garraway and J. Watson, and Potatoes by W. Robinson and J. Curtis, who took the prizes in the order named in each instance. Mr. A. Miller, gardener to Walter Long, Esq., M.P., Rood Ashton, staged, but not for competition, a very fine dish of selected Old Red Tomatoes, which fully merited a cultural commendation.

CERTIFICATES OF MERIT.—Messrs. G. Cooling & Sons, Bath, arranged a very pretty group of Orchids and other choice flowering plants, interspersed with Palms and Ferns. They also had a fine stand of cut Roses in large bunches, the best represented varieties being Niphetos, Catherine Mermet, The Bride, Alba rosea, and Dupuy Jamain. A certificate of merit was awarded this group, and to the same firm for

the beautiful single white Himalayan Rose, a variety that ought to become very popular among lovers of single varieties. Messrs. Veitch and Sons also arranged an effective group of plants, conspicuous among which were several very pretty Japanese Maples, as well as several Orchids, Rhododendrons, Azaleas, and other flowering plants. They also had plants of the new Boronia heterophylla, a showy bright crimson variety, sweetly scented, and very floriferous. Numerous photographs of rockwork, and the prize plan of the People's Park, Poole, were also shown by this firm, to whom also a certificate of merit was awarded. A similar award was made to Mr. A. A. Walters, Bath, who had a large group of Pelargoniums, Mignonette, and other popular plants.

MANCHESTER SHOW.

MAY 18TH TO 25TH.

THE Whitsuntide Show in the Botanic Garden, Old Trafford, Manchester, is regarded in the north and over a considerable portion of England as one of the great horticultural events of the year, attracting exhibitors and visitors from long distances. The Society which possesses the garden named, with their Secretary and Curator, Mr. Bruce Findlay, have concentrated their efforts for many years past upon this Show, and though smaller ones are held at intervals during the year, that at Whitsuntide is made as representative as possible by means of a comprehensive schedule and liberal prizes. The Show which opened last Friday is no exception to the rule as regards being a full, important, and beautiful display, but a change seems to be coming over shows of this character, and they have to be viewed more as spectacles than examined very closely in detail. At one time Manchester was famed for its large specimen plants, and we have seen some magnificent exhibitions there in which stove and greenhouse plants, Ferns, fine-foliage plants, and Orchids were represented by the grandest example of cultural skill that could be seen in any portion of the kingdom. The owners of some of these have left the neighbourhood, others have died, and the collections have been dispersed, so that now there are comparatively few who possess collections of the giant specimens which have graced so many exhibitions. Grouping and miscellaneous collections are taking the place of the specimens to some extent, but no show held in spacious tents or buildings seems complete without them. Classes with substantial prizes must always be provided in the schedules of these exhibitions for the specimens, but for a great portion of what may be termed the "filling up," group classes must be depended upon.

Though differences in the style of the Manchester Shows have been gradually arising, that just held was quite as remarkable as ever for the good culture displayed by the condition of the smaller plants exhibited, and there can be no question that a healthy, well-furnished or profusely flowered plant of moderate size is far preferable to a giant defective either in foliage or flowers. In another respect the Show was fully equal to many of its predecessors—namely, in the general effect and varied interest, and the garden is exceptionally favoured in this matter, owing to the capital buildings that are devoted to the purpose. Some alterations and improvements have been recently effected as the result of the great general Exhibition held in the garden last season, and one of the most important of these is the extension of the building, which was formerly covered with canvas on the occasion of the shows, but now permanently glazed. This was 360 feet long by about 60 in width, but it has been increased by an annexe at the lower end over 200 feet long and of similar width, giving a total length closely approaching 600 feet. At the upper end there was formerly a high bank with a path at the top from which a good view of the Show could be obtained. This was all cleared away for last year's Exhibition, a refreshment and dining room being now added to that end. Along the sides of the building are the banks, alternately and irregularly projecting or retiring, so as to form prominent points for groups or plants of importance, and bays or recesses for others of less interest, the centre being occupied by a succession of circular, oval, or variously formed beds and mounds, upon which Palms are arranged, surrounded by groups or collections of plants of various kinds. It is a matter of opinion whether too many of these central groups have not been employed, as these in part partially obstruct the view of the others, and when seen in succession from one end, unless the colours of the plants are judiciously contrasted, blended, or relieved by foliage, they have a discordant effect. To our mind these might be advantageously reduced both in size and numbers, but under any circumstances it is far the finest building in the country devoted to horticultural exhibitions. A covered communication has also been effected between the upper end of this building and the Exhibition house, a span-roof structure, 80 yards long and 30 or 40 feet feet wide, adequately heated, and devoted to Orchids or other tender plants. This also is unique, for at no other summer show can choice plants be exhibited with the same safety as at Manchester. For many years the Whit Show has been celebrated for the display of Orchids, and on the occasion under notice they constituted a special feature, but generally characterised like the other classes mentioned by the absence of large specimens. So far, however, from this being a disadvantage the appearance of the house was more pleasing to many visitors, as there was less formality. The foliage plants, with the principal stove and greenhouse plants, were arranged behind the Orchids, and the collections not for competition occupied the central table.

ORCHIDS.—In this house the most interesting class was that for a group of Orchids, Ferns, and foliage plants arranged for effect, a mode of exhibiting Orchids that we have frequently commended, and which has received much more attention from the framers of schedules in the past few years than formerly. By far the finest exhibit in this class was the group from A. Heine, Esq., Fallowfield (gardener, Mr. J. Cragg), who wins this season the champion of the amateur classes for Orchids, as he secured no less than six first prizes. The group had an irregularly undulating foundation of Adiantums and a background of Palms, smaller Palms and other fine-foliage plants rising from the bank of Ferns, with such Orchids as Cattleyas, Dendrobiums, Odontoglossums, Lælias, Cypripediums, and Masdevallias. Two remarkable specimens demand a word or two—namely, Dendrobium Paxtoni and D. Devonianum. The former was a wonderful mass, about 7 feet high, and as much in diameter, and it bore innumerable racemes of its rich golden flowers, having a fine effect in the centre of the background. D. Devonianum was equally notable in its way, for very seldom is this graceful Orchid seen in such perfection. It was growing in a basket elevated on a pedestal around which drooped scores of long growths crowded with soft tinted flowers. T. Statter, Esq., Stand Hall (gardener, Mr. R. Johns), was second with a collection of healthy, well-flowered Orchids and Adiantums, but they were not arranged to the best advantage, and too many Crotons were employed. The Duke of Sutherland, Trentham (gardener, Mr. Blair), took the third place, Masdevallias being conspicuously bright in this group. Mr. Heine's exhibits occupied a large space in the house, as may be gathered from the fact that he had forty-one specimens besides those in the group just mentioned, comprising the first prize plants in the classes for ten *bonâ fide* specimens, twelve and six Orchids, ten Cattleyas, and three Vandas. It is unnecessary to particularise all these, but some of his best specimens were Cattleya Skinneri and the variety alba, Lælia purpurata in several beautiful varieties, Dendrobium densiflorum, Calanthe veratrifolia with twenty-two spikes, and Vanda teres with sixty large flowers. In some of these classes Mr. Heine was the only exhibitor, but Mr. R. Elphinstone, Stretford, was second with twelve Orchids, and Mrs. Hodgkinson, Bowdon (gardener, Mr. D. Boardman), secured a similar position with ten *bonâ fide* specimens, his finest plant being Brassia verrucosa majus having sixteen long racemes. In the nurserymen's classes for Orchids Mr. H. James, Norwood, and Mr. J. Cypher shared the honours, the former taking the second prize for a group, and the first for ten Orchids in flower; Mr. J. Cypher following in the last-named class, a rather unusual position for him, but he had evidently concentrated his Orchid strength at Regent's Park and the Temple.

STOVE AND GREENHOUSE PLANTS.—Mr. J. Cypher had the class for twelve stove and greenhouse plants to himself, but he would have proved a formidable opponent for any other competitor, his specimens being in beautifully fresh condition and profusely flowered. An extraordinary example of Pimelea spectabilis attracted the attention not only of the public but the most experienced plant growers and exhibitors present, and it was pronounced to be one of the finest ever shown. It was nearly 6 feet high, at least 7 feet in diameter, every shoot terminating in a large head of white flowers. The plant had evidently been grown quickly and vigorously; it was not too formally trained, and it was altogether a superb example of skilful culture. A plant of Erica ventricosa magnifica 5 feet in diameter was scarcely less commendable for its health and beauty. Mr. Cypher was also first with six Ericas and eight fine-foliage plants, followed in each case by Mr. H. James. S. Baerlein, Esq., Didsbury (gardener, Mr. G. Williams), had the best ten fine-foliage plants in the amateur class, showing large Palms, Cycads, and Cordyline indivisa. Mr. Baerlein was also first with six Dracænas, Colonel Wingfield, Shrewsbury, and Mr. W. Hayes, jun., Sale, being second and third, and with Palms and Yuccas he won similar honours. Azaleas and Ericas in the amateur classes were of an ordinary character, second and third prizes being accorded to Messrs. Baerlein; J. Brown, Heaton Nursery; and S. Lord, Brooklands. For ten Pitcher Plants and Sarracenias Mr. A. J. A. Bruce, Chorlton, secured first honours with good plants, and Mr. H. James had the best twelve Dracænas.

Several non-competing groups or collections were staged in this house, the most extensive and beautiful being that from Mr. B. S. Williams, Upper Holloway, who has for many years contributed liberally to the attractions of the Show, but he has rarely had a more interesting collection than on this occasion. Large numbers of choice and new Orchids, together with a selection of the most effective stove and greenhouse plants, of useful size for decorative purposes or growing into specimens. Messrs. R. Ker & Son, Liverpool, had a group of highly coloured Crotons and other plants. Mr. J. Charlesworth, Heaton, Bradford, showed a group of Odontoglossums, Palms, and Ferns; the Liverpool Horticultural Company exhibited a large and beautiful group of Orchids and Ferns lightly and tastefully arranged, and Mr. W. Owen, Northwich, had a group of Cattleyas and Ferns.

The principal competing groups were arranged in the long exhibition building, two classes being devoted to them—namely, one for nurserymen and the other for amateurs. The trade groups were required to be arranged in a space not exceeding 250 square feet, and Messrs. R. P. Ker & Son, Liverpool, were awarded first honours for a brilliant and handsome group, the Crotons, for which the firm is noted, being extremely well coloured. Rhododendrons, Ericas, Azaleas, and other bright flowering plants were employed with abundance of Ferns and foliage plants, but it would be somewhat of a relief, and would certainly not have lessened the attraction of the group, if a few less Crotons had been used. Mr. J. Mason, Ashton-in-Mersey, was second with a group in which a tasteful style had been adopted, but the material apparently was not adequate to carrying it out satisfactorily, for it was somewhat weak and deficient in colour. To the amateurs'

groups 150 square feet each was allotted, four competitors entering the class. Mr. S. Baerlein led with a light and tasteful composition of Adiantums, Rhodanthes, Crotons, Pelargoniums, &c. Mr. S. Lord followed with a varied group not quite so light as the preceding; Mr. G. B. Blair, Whalley Range, and Mrs. Hodgkinson taking third and fourth place. With hardy herbaceous plants Messrs. J. Dickson & Son, Chester, were the principal exhibitors in the nurserymen's class. In the class for forty alpines Messrs. Paul & Son, Cheshunt, were first, and amongst amateurs Mr. J. Dickens gained a similar position. For thirty hardy herbaceous and bulbous plants R. P. Gill. Esq., Woodhayes Hall, Ashton-on-Mersey (gardener, Mr. Plant), was first with a capital collection of showy plants, a large pan of the blue Ajuga genevensis being conspicuous. Roses from Messrs. Paul & Son, Pelargoniums and hardy Ferns from Messrs. C. Ryland & Co., Ormskirk, were all good, as also were the amateurs' hardy Ferns from Arthur Bitley, Esq., Pendleton, and Mrs. Hodgkinson, who were first and second respectively.

Cut flowers were principally Pansies and Roses; the former were chiefly from local growers or fanciers; Mrs. Mellor, Chorlton-cum-Hardy, Mr. G. Robinson, Sale, and Mr. J. Dickens, Higher Broughton, winning the leading prizes. Exceptionally beautiful blooms of Tea Roses shown by J. Marshall Buckley, Esq., gained the exhibitor the first prize, and it is seldom that such substantial Rose blooms are seen at this time of year. The varieties were Princess of Wales, Alba rosea, Madame de Watteville, Grace Darling, Anna Ollivier, Comtesse de Nadaillac, Hon. E. Gifford, Niphetos, Souvenir d'un Ami, Marie Van Houtte, Madame Welche, and Catherine Mermet. Colonel Wingfield, Onslow, Shrewsbury (gardener, Mr. Lambert), sent a box of thirty-six grand flowers of Maréchal Niel Rose, of great size and substance and rich colour.

Fruit was not very abundant, but it was better than might have been expected at such an early date in a late season like the present. Sir W. Pease, Bart., M.P., Hutton Hall, Guisboro' (gardener, Mr. J. McIndoe), was the principal exhibitor, taking first with eight dishes, third with black Grapes, second with two Pine Apples, first with one Pine Apple, with Peaches and green-flesh Melons, all the samples staged with creditable productions. P. J. Thellusson, Esq., Doncaster (gardener, Mr. Chuck), was first with white and Black Grapes, the former even bunches of Duke of Buccleuch, the berries large and very clean; the black Grapes were Black Hamburgh, well finished for early Grapes. W. Bretherton, Esq., Chorley (gardener, Mr. I'Anson), followed in the white Grape class with Foster's Seedling, small.

The miscellaneous exhibits were as follows:—An extensive and beautiful group of greenhouse plants from Messrs. Wm. Cutbush & Son, Highgate, Azaleas, and the graceful Saxifraga pyramidalis freely employed being striking. Messrs. F. & H. Dickson, Chester, had a pretty group of Maples and Carnations; the white Madlle. Carle, the yellow Mrs. Reynolds Hole and Lilac Charles X. were employed with capital effect. Mr. J. Hayward, Cheadle, showed a group of Rhododendrons and other plants. Messrs. W. & J. Birkenhead, Sale, had a group of Tree Ferns and dwarf Ferns of various kinds, arranged to form a central group. Messrs. J. Waterer & Co., Bagshot, had large banks of Rhododendrons. Messrs. Ryder & Son, Sale, had a group of Primula Sieboldi varieties, and outside Messrs. C. H. Frettingham & Son, Beeston, had a fine exhibit of Conifers.

TUBULAR FLOWER HOLDERS.

Messrs. George Smith & Co., Commercial Road, Pimlico, exhibited their new receptacles for displaying cut flowers at the Royal Horticultural Society's Show last week. The flower holders are solid disks in the shape of a dome, either round or oval, with flat base, in which are sunk forty to fifty tubular orifices gradually inclining outwards from the centre. When flowers are to be arranged, the tubes are filled with water, and the disk is placed on an ornamental plate of wide diameter (preferably of glass or terra cotta), which retains any overflow of water, and supports the outer leaves. The sprays of flowers and foliage are inserted in the tubes one by one, according to the taste of the arranger—the highest in the centre, others inclining outwards, and the lowest resting on the margin of the plate. As will be perceived even a few flowers may be arranged to the best advantage, while, if numerous, their effect need not be spoiled by overcrowding. The engraving on fig. 58 represents the disk arranged with flowers; fig. 59, showing the disk singly, and the same placed on the plate ready for arrangement. We are informed there was a great demand for these articles at the Show in question.

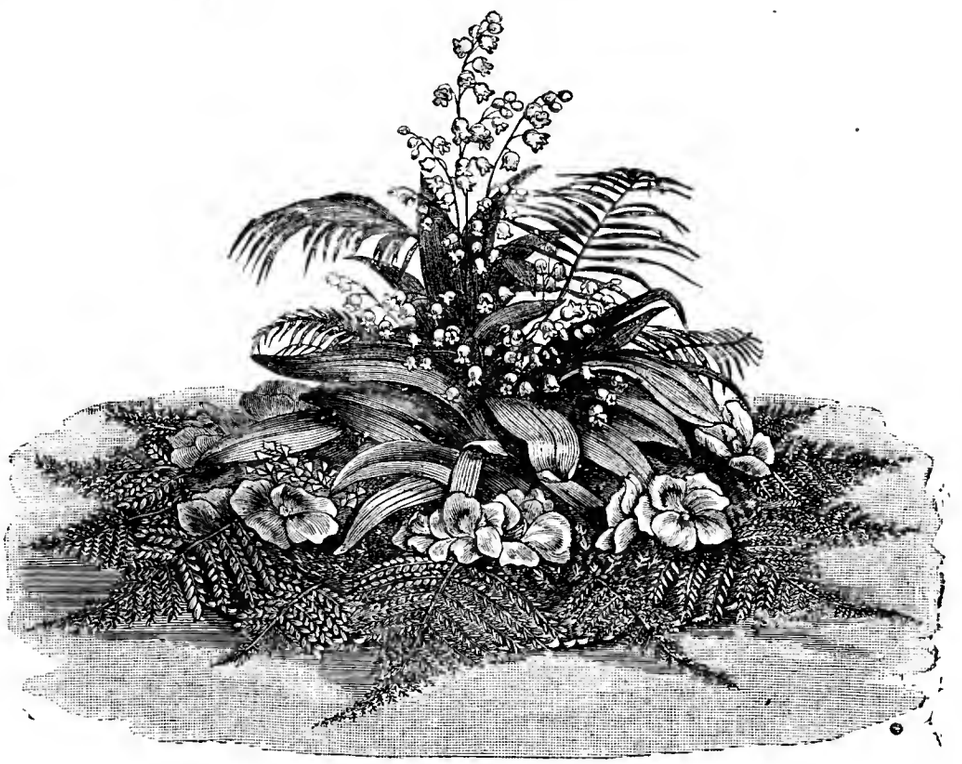


Fig. 58.

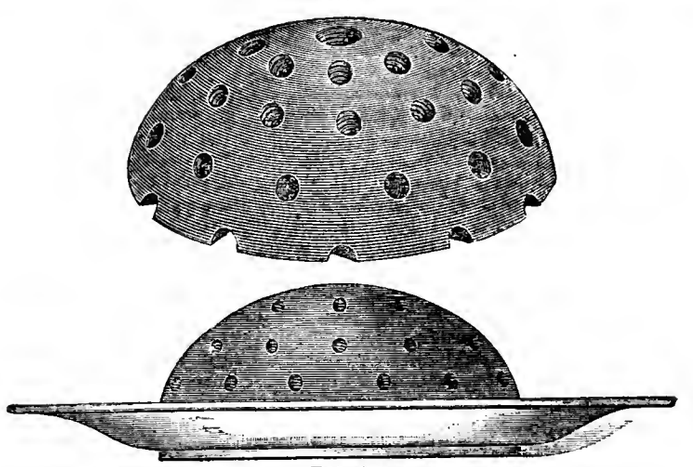


Fig. 59.

GARAWAY'S CLIFTON NURSERIES.

There are no better known nurserymen in the west of England than the Messrs. Garaway. When I first knew them they were inclined to continue on the old lines, keeping hundreds of old-fashioned hard-wooded plants in pots. These are nearly all disposed of, only enough being kept to meet chance orders. Neither fine-foliaged plants, if we except such useful Palms as Arecas Baueri, rubra sapida and luteseens, Chamærops excelsa, Cocos Weddelliana, Cycas revoluta, Euterpe edulis, Geonomas gracilis and intermedia, Kentias Belmoreana, Canterburyana, and Fosteriana, Latania borboniea, and Seaforthia elegans, nor hardwooded plants, are in great demand in this part of the country. What are principally wanted are flowering plants, and more especially those producing choice white flowers. These are now being largely grown by Messrs. Garaway, nearly every house being crowded with serviceable young plants, all clean, healthy, and saleable. A double advantage attends the growth of these plants. Quite recently a show house fronting an important street has been built, and with this has followed an enlargement in the cut flower trade, wreaths, crosses, and bouquets being daily in demand. This enables the proprietors to profitably utilise all their surplus flowers, and at Easter time, when my visit was paid, many more flowers could have been sold than were available. Gardenias are always useful, these highly fragrant beautifully white flowers being good alike for bouquets, wreaths, and crosses. Of these there is a good bank of plants, the favourite varieties being G. florida and intermedia. Another useful companion for Gardenias is

found in the Tabernæmontana coronaria flore-pleno, this when in good health producing a profusion of pure white semi-double and sweet-scented flowers, but not quite so large as Gardenias. Some Eucharises that have been in bad health are under treatment. All the best bulbs are placed singly into 5-inch pots, and four smaller ones are placed in the same sized pots. All are plunged in a brisk bottom heat, and with plenty of top heat, shade, and moisture in the atmosphere should soon become well established. Bulbs thus treated frequently start vigorously, smaller side bulbs being formed in a few months, and if they are gradually shifted into larger pots useful plants result. Pancratiums, of which the best is P. fragrans, also do well under somewhat similar treatment. These are less liable to succumb to the attack of the bulb mite, and their elegant flowers produced at various times are much appreciated for bouquets and wreaths. Ixoras in variety and Euphorbia jacquiniæflora are found very serviceable, and it is almost needless to add a fine plant of Stephanotis floribunda on the roof of a large stove more than pays its way. All other more or less popular stove flowering and fine-foliaged plants are cultivated, regard being paid to those most suitable for dinner table and house decoration. A good selection of Ferns is kept in stock, but the invaluable Adiantum cuneatum is in the ascendant, nothing yet being found to surpass it for cutting from. Asparagus plumosus nanus and A. tenuissimus are also good additions to a house principally devoted to Ferns, the cut sprays from these being very elegant and most durable.

Among plants grown in the intermediate house there are none more useful in the winter months than Bouvardias, and a good stock of these are being propagated. The double white Alfred Neuner is the most serviceable, and the pink sport from it, President Garfield, is also very pretty and serviceable. Triomphe de Nancy, if I remember rightly, was recommended as a good double scarlet, and among singles the best are Vreelandi and Humboldti corymbiflora, white; Elegans and Dazzler, scarlet; and Queen of the Roses. I also noticed a large stock of the spring flowering Crassula jasminea. This succeeds admirably on a greenhouse shelf, is of dwarf bushy habit, and rarely fails to produce abundance of pure white sweet-scented flowers not unlike a Bouvardia in appearance, and even more serviceable and durable in bouquets and wreaths. This and the "Little Pet" Roses (Rosa polyantha) are plants that should commend themselves to amateurs especially. The latter, of which the best are Mignonette, rosy pink, Parqueritte and Little Pet, white, are suitable for small pots, and if given a light position in a greenhouse will yield a long succession of tiny double blooms in clusters. At Messrs. Garaway's they are principally grown in 5-inch pots, and a long row of them were flowering beautifully. A good selection of Tea Roses are also largely grown both for distribution and to afford cut blooms. Some of the most popular and serviceable are Niphetos, Madame Lambard, Safranot, Souvenir d'un Ami, Catherine Mermet, Anna Ollivier, and Isabella Sprunt. W. F. Bennett and The Bride, the last-named being a valuable white sport from Catherine Mermet, will also be largely sought after when their merits are better known. Of Maréchal Niel it seems impossible to propagate too many plants, and I noticed a fine healthy lot in pots worked on the Manetti stock.

At Easter time white Azaleas are especially valuable, and of these they have a capital collection of bushy untrained plants, and which are the best to cut from. The preference is rightly given to the semi-doubles, notably A. Borsig and Deutsche Perle, both early and good; Narcissiflora, very early and serviceable; Raphael, a good grower and free; Reine du Portugal, extra fine, but with a little green and crimson in some of the flowers; and Bernhard Andreas alba, the last named being the finest double white for Easter time, and of vigorous habit. Good single whites are Cérès, Reine des Blanches, Étendard de Flandres, very fine flowers, and Alba illustrata, the latter producing large bunches of flowers. Bernhard Andreas, dark violet purple, semi-double, and very free; and Souvenir de Prince Albert, peach rose, margined with white, semi-double, late, and very free, are also worthy of special mention. A number of dwarf hybrid Rhododendrons in pots were beautifully in flower, and these as well as forced Azalea mollis are well adapted for conservatory decoration early in the year. In addition there were numerous perpetual flowering Carnations, well-grown Cinerarias in excellent variety, Primulas, Hyacinths by the hundred, and among which were many extra fine spikes; Narcissi, Spiræas, and Arums. Lilium candidum is also largely grown in pots, and gently forced so as to have plenty at Easter. The bulbs were potted in November, started coolly and introduced into gentle heat in batches. Lilium Harrisi later on will be very fine, but as a rule the flowers are rather too large for wreaths and crosses. Lilium eximeum and Gladiolus The Bride are both admirably adapted for pot culture, and these can be had in bloom at Whitsuntide.

Chrysanthemums are made a specialty at Garaway's, thousands being sold every season, and several hundreds are being forwarded for producing fine blooms. Greenhouse Pelargoniums, again, always seem to do well with them, one house being filled with healthy half-specimens, and a still larger one with stocky plants in 5-inch pots, the majority of which will be sold "in the trade." Herbaceous Calceolarias look remarkably well, very few of the plants presenting the sickly yellow appearance very commonly met with. Many thousands of Dahlias are already potted, the semi-double or Cactus varieties being most in demand, and other houses were filled with bedding Pelargoniums, Coleuses, Tuberous Begonias, Fuchsias, and other popular plants. Pot Vines are largely and well grown, those from cut-backs naturally being the strongest, and large supplies of Peach and Nectarine trees are grown in pots for fruiting in orchard houses. In addition to the Clifton Nurseries the Messrs. Garaway have also large nurseries at Keynsham, where all the shrubs, forest and fruit trees, Roses, and other hardy plants are grown.—VISITOR.

AURICULAS.

SCOTTISH PRIMULA AND AURICULA SOCIETY.

THE second Exhibition of the above Society was held in the Calton Convening Rooms, Edinburgh. The room itself is very suitable, comfortable for flowers, and convenient for visitors; cool, quiet, dustless, airy without draughtiness, and admirably lighted from above by clear daylight without direct sunshine. Hence the Auriculas at Edinburgh had every advantage, which is almost past hoping for in the dreary dinginess of London and the highly compound murkiness of Manchester.

This Show was decidedly superior to the Society's first Exhibition in 1887, when very many flowers were damaged in transit, one leading grower suffering the severe torture of seeing his box of plants coming upside down from the ferry to the train upon a porter's handbarrow. They could have won high, but all they did was to escape with bare life, and the Exhibition room became for them the hospital where their injuries were carefully attended to. Mr. B. Simonite and myself, who were asked to judge, thought the flowers very good under the difficult circumstances and slow development of a late season. The classes were also well filled by the thirteen exhibitors of Auriculas. Plants were well grown, and there were bright flowers in many of the stands; but in some instances there were pips too far beyond their best. In these the tube was dead, and an Auricula pip is done for, critically, when it is "down in the mouth."

Some of the exhibitors had put their trust in a multitude of pips, more than could be displayed effectively, more than the plant could finish well, and more than could possess good properties. Each pip should be both fairly seen and be fair to see. It is better that they should stand slightly apart than so overlap one another's features that admiring eyes only see one or two full moons, and the rest in various phases of eclipse.

It is seldom indeed that we have need to slaughter a good pip to reduce the surplus population. I cannot recall an Auricula among the "edges" that will produce sufficient perfect pips to form a confused ball of bloom. When it is thus confused it is by the crowding of inner pips, which are innately feebler in size and inferior in form and proportions of the colour zones. These take up valuable space, which timely thinning will allow to be filled with more effective flowers; and as in a bunch of Grapes at thinning time, killing will eventually be found no murder.

Varieties vary much in their power of producing good pips; Prince of Greens or George Lightbody have been seen with eight or nine fine ones, while True Briton, after two or three superb white-edged ones, will complete the truss with things horrible.

In the particulars given me by the Hon. Secretary there are, I see, only the names of the winning flowers. Perhaps he will kindly supply, and the Editor kindly accept, a supplement of my notes with a list of the winning exhibitors; for both the growers north of the Border and the flowers they grow will be welcome intelligence to all who feel keen interest in the Auricula.

Some of the flowers were old faces that are fading into memories further south; but it was a refreshment of old associations to see them again, and they were much as I had ever known them. There was Page's Champion, lovely in its green edge, but with the ground colour inconstant, two shades of maroon, and with the petal segments cutting into the circle and the paste. Booth's Freedom with its pure and darker green edge and rich black velvet ground, but with the old fault of an angular paste, always the worse the better the flower is grown.

Old Ringleader was very brilliantly done, but one of those that suffered from a congestion of the pips. Ashworth's Regular was larger in the pips than I have ever seen it, but it could not manage purity of body colour, the meal creeping over it. Such flowers as Stapleford Hero, Meteor Flag, Lady Sophia Dumaresque, Countess of Dunmore, and Fair Maid, a pale and ghostly old white edge, with every feature shrouded in a faint veil of meal, I saw with the feeling that these were as shadows of the past. So also seemed Earl Grosvenor and the dark selfs Vulcan and Ivanhoe, and others.

I trust it may not be thought that I would cast unkind reproach on these old flowers or think them a melancholy sight. I have grown and loved them all, and so have many more of us. Only the sight of them after long absence was touching. It was like re-visiting in after life some scenes of earlier days, to find a native village smaller, a hill less mountainous, a well-known stream less enchanting than it seemed, while yet one had not wandered far beyond.

As for the newer Auriculas they can but with comparative slowness come into circulation. They have to be both proved and multiplied, and that work is not rapid. But there need be no fear that they will be accepted except upon their intrinsic merits. No mere puff of the raiser will blow them into favour. They must compete with the best there are, and they in their turn, if they stand the test, will be the standards for the flowers newer still. Thus the standard rises and will ever rise.

A twofold good test for a seedling will be found in open competition and in stern severity at home. It is the kinder way not to be a little blind.

An interesting feature in the prize list were the collections of six

dissimilar selfs for a special medal. It was happily won by the exhibitor who last year had his chances shattered by the reversal of his box, in which there was not even hope left unescaped. That competition showed that six good selfs are not easy to show or bring in good condition in an awkward season. The premier flower of the Exhibition was a very bright Acme, not often seen so good, better up upon the stem than it often is, body colour evenly balanced on the petals, which it often is not, edge a good white, and tube lively, the five pips of even quality, and the petals prettily smoothed. Acme's edge is frequently no whiter than the grey-mealed foliage, and, contrary to law and custom, is at times a superb thing from an autumn bloom.

A premier flower for each class was eligible out of the whole of the stands and single plants, and in green edges the Prince of Greens, which bloomed so phenomenally last season and won so highly in the English shows, was here again the premier, though with a lessened splendour. Prince at his best, with his grand green edge, and jet-black ground colour, and round paste, but always weak if not "fishy" tube, unites the best with the worst property of the Auricula, and reminds me somehow of Hood's lament over the fanciful make-up of the mermaid—

"That joined, to best of human form
The worst end of a fish."

In grey edges Alderman Wisbey in that character was the premier flower, none of the leading greys being in sufficient character and condition. In the selfs an exceedingly good and fresh complexioned Topsy, with more well-finished pips than this variety almost ever carries, had the post of honour.

In addition to the Auriculas, of which, in the Alpine classes I have no notes, there were six exhibitors of kindred and other plants, and among the Primula species was a very beautiful and varied collection from the Edinburgh Royal Botanic Gardens, also some very finely grown specimens of P. obconica completely sheeted in masses of bloom, some flowers being of a very large type.

I cannot but say how true and enjoyable were the warm welcomes and the keen enthusiasm of the florist brotherhood in the far north. It would have carried off even a poor show well, and it was nothing damped last year by manifold misbaps to the plants. There is a social floral atmosphere in which anything will grow, and the land, by tradition now waxing old, is a happy land for the Auricula. —F. D. HORNER, *Burton-in-Lonsdale.*

LIST OF WINNING FLOWERS.

For the gold medallion, presented by Mr. W. Straton, Broughty Ferry, for six self Auriculas, dissimilar—Heroine, Black Bess, Pizarro, Princess, Onward, Sapphire.

For six dissimilar Auriculas, one at least in each class.—First, Prince of Greens, Conservative, Ajax, Beauty, Frank Simonite, Mrs. Douglas. Second, Heatherbell, Black Bess, Colonel Taylor, George Lightbody, Ringleader, Prince of Greens. Third, Prince of Greens, Acme, Miss Gair, C. J. Perry, Dr. Kidd, and seedling green edge.

Four dissimilar, one in each of the classes.—First, Lovely Ann, Geo. Lightbody, Acme, Meteor Flag. Second, Heatherbell, Geo. Lightbody, Rev. F. D. Horner, Heroine. Third, Rev. F. D. Horner, F. Simonite, Rd. Headly, Lord Lorne.

Pairs, dissimilar in variety and class.—First, Geo. Lightbody, Stapleford Hero. Second, Lovely Ann, Sophia Dumaresque. Third, Lancashire Hero, Dr. Kidd.

Single Plants, Green-edged.—First, Rev. F. D. Horner; second, Booth's Freedom; third, Page's Champion; fourth, Lovely Ann; fifth, Colonel Taylor. Grey-edged.—First, Alderman Wisbey; second, Ringleader; third, George Lightbody; fourth, Trail's Beauty; fifth, George Lightbody. White-edged.—First, Beauty (Trail); second, John Simonite; third, Mrs. Dodwell; fourth, Frank Simonite; fifth, Earl Grosvenor. Selfs.—First, Topsy; second, Black Bess; third, Cathedral (Browning); fourth, Andrew Millar; fifth, Lord Lorne.

Premier of whole Exhibition.—Acme (white-edged). Premier green edge, Prince of Greens. Premier grey edge, Alderman Wisbey. Premier white edge, Acme. Premier self, Topsy.—F. D. H.

The list of prizewinners is published as we received it in the columns of a newspaper:—Probably the best cultivated specimens were shown by Mr. Ben Simonite, Sheffield. In respect of size and colour they were admirable. A leading prize—viz., a gold medallion given by the Secretary—was won by Mr. J. D. Kerr, Douglasfield, Dundee, for the best six self stage Auriculas. The following is the prize list:—

Six plants, dissimilar in class and variety.—1, W. H. White, Newcastle; 2, J. D. Kerr, Douglasfield; 3, W. Marshall, Ayr. Four plants, one from each class.—1, E. Adams, Swalwell; 2, Jas. Black, East Calder; 3, W. H. White, Neweastle. Two plants, dissimilar.—1, E. Adams; 2, W. Kilgour, Blair Adam; 3, W. H. White. One plant, green-edge.—1, W. H. White; 2, 3, 4, and 5, W. Kilgour, Doune. One plant, grey-edge.—1, F. D. Kerr; 2, W. Kilgour; 3, W. Bairnsfather, Leek; 4, E. A. Adams; 5, W. H. White. One plant, white-edge.—1, W. H. White; 2, W. Marshall. One plant, self.—1, J. D. Kerr; 2, 3, and 4, W. Kilgour; 5, A. Scott, Forglen. Premier plant in each class.—1, W. H. White, green-edge; J. D. Kerr, grey; E. A. Adams, white; J. D. Kerr, self. Premier Auricula in Show.—E. A. Adams, Acme, white. Alpine Auriculas, six dissimilar.—1, E. A. Adams; 2, James Black; 3, A. Calder. Four dissimilar.—1, E. A. Adams; 2, James Black; 3, A. Calder. Two dissimilar.—1, James Black; 2, A. R. Henderson; 3, E. A. Adams. Polyanthus, three dissimilar, gold laced.—E. A. Adams. Primula species, six distinct.—W. Straton, Annfield, Broughty Ferry. Three pots Primula obconica.—1, W. Henderson, Clermiston; 2, W. Straton."



THE NATIONAL CHRYSANTHEMUM SOCIETY'S PROVINCIAL SHOW AT SHEFFIELD.

A PARTY of officers and members of the National Society left London last week to visit Sheffield and complete some preliminary arrangements respecting the provincial show to be held in that town next November. The Committee and officers of the Sheffield Society took the opportunity of arranging to entertain their visitors at a dinner on Saturday evening last, and the idea was carried out in the earnest and thorough manner which distinguishes our northern friends. About fifty members and patrons of the Sheffield Society assembled at the "Clarence Hotel" at 7 P.M., Capt. Mark Firth presiding, the following being the representatives of the National Society present:—Mr. R. Ballantine (Vice-President), Mr. Wm. Holmes (Hon. Secretary), Mr. Lewis Castle, Mr. G. S. Addison, Mr. G. Stevens, and Mr. J. H. Laing. Of the local Society there were Mr. Duncan Gilmour, jun., Mr. Fenton, Mr. H. Outram, Mr. T. B. Hague, Mr. T. Haigh, Mr. Allison, Mr. Eadon, Mr. Broomhead, Mr. Ben Simonite, Mr. J. Udale, Mr. Walker, &c., and the Hon. Secretaries, Mr. W. K. Woodcock, Mr. J. W. Needham, and Mr. J. W. Jarvis.

An excellent repast was served by Mrs. M'Culloch, and after full justice had been done to it, the toasts were commenced by Mr. T. Haigh proposing "The National Chrysanthemum Society and Visitors." He said they all hoped that the new departure which had been taken by the National Society in coming into the provinces would bring it much into notice. The local society felt greatly honoured by the fact that the National Society had selected Sheffield as the town in which to hold its first provincial show, and he trusted it would be a complete success.

Mr. Ballantine was received with applause on rising to respond. He said it was a peculiar pleasure to him to be present to inaugurate a new departure in the history of the National Society, and he trusted that the commencement of all the meetings in other towns would be as pleasant as the commencement of the November Show had been in Sheffield. From the manner in which the deputation had been received, and from the correspondence which had passed with the local officials, he had no doubt whatever that the holding of the first provincial show in Sheffield could not fail to have a successful issue.

Mr. W. Holmes also responded, and met with a cordial reception. He expressed regret that they had not with them the President of the National Society, Mr. Edward Sanderson, and then said the kindness and hospitality they had received since their arrival in Sheffield had far exceeded their expectations. He also thanked them for the kind references made to the National Society, with which he had been connected from its beginning, and in working which he had taken a somewhat active part. He had watched their Society grow from a purely local into a national Society, but none of the steps taken in connection with it had been watched with greater pleasure and anticipation than the one they were now attempting—the holding of a provincial Show. Such a departure was suggested four or five years ago by Mr. Morton, of Darlington, but it was not entertained. The Committee were now unanimously of opinion that the attempt should be made, and then came the question, Where should the first provincial Show be held? The reply from the executive of the Sheffield Society was so satisfactory—so thoroughly business-like—as to leave no doubt in their minds as to which was the right town in which to begin the attempt. They knew that in Sheffield there were not only large numbers of florists who take an interest in Chrysanthemums, but that there were men who, like themselves, neither knew nor believed in the word failure. Hence the National Society had no hesitation in selecting Sheffield as the first town to be visited, and he hoped the pleasant meeting they had that day had was a happy augury of the success which would attend their first provincial Show.

Mr. G. S. Addison followed with the toast of the "Sheffield and West Riding Chrysanthemum Society and the Hallamshire Gardens Society," and spoke of the very great hospitality the visitors had received from the Sheffield Society. He should be pleased to meet the officials again in November. He had been told that in Sheffield they could grow Chrysanthemum blooms as big as they wanted them. They could not manage that in the south, but they could grow small and compact blooms. He hoped the Show would be a great success.

Mr. W. K. Woodcock, in responding, said the local Society had only been established four years, and they were very proud of the success it had already achieved. For that success they had to thank, in a very large measure, their esteemed President, Mr. Firth. Not only had Mr. Firth rendered them valuable financial aid, but he had used his great influence in many ways to promote the prosperity of the Society. He also bore testimony to the valuable aid they had received from Mr. Gilmour, Mr. Fenton, and other friends, and concluded by expressing the

hope that much good would result from the National Society coming to Sheffield.

The health of the Presidents and Vice-Presidents, proposed by Mr. Ledger, the patrons and subscribers by Mr. Eadon, and the Horticultural Press by Mr. J. Walker, were duly honoured. Mr. L. Castle in replying to the last named, regretted the unavoidable absence of Mr. J. Wright, Mr. Wynn, Mr. Gordon, and Mr. Dean, but intimated that all had promised their hearty support to the project.

Besides the invitation to the dinner the Sheffield Committee prepared a programme for two days' excursions, which proved most enjoyable. One day was devoted to a visit to Chatsworth Gardens and Park, a delightful journey by road over the moors in most favourable weather being thoroughly appreciated, and the pleasure of the trip was considerably increased by the hospitable reception accorded to the party by Mr. Owen Thomas. Upon the second day the party visited Oakholme, the residence of T. Wilson, Esq., who, with his gardener, Mr. Hannah, accompanied the visitors through the compact well furnished range of houses and neatly kept garden. At Mount View Mr. D. Ward received the party most cordially, and conducted them through his numerous houses devoted to valuable and well grown Orchids, of which there is now a fine display in flower. The residence of A. Wilson, Esq., Westbrook (gardener, Mr. Pidsley), was next visited; Eccleshall Wood, now undergoing a process of improvement, and then to Oakbrook, the residence of Mark Firth, Esq., where the gardener, Mr. Woodcock, entertained the party. A hurried visit to Mr. D. Gilmour's, Sandygate Rose Nursery, completed the tour, and shortly after 6 P.M. the members of the National Society left Sheffield, amply satisfied with their visit, which true Yorkshire hospitality and heartiness had rendered enjoyable in the highest degree.

The above brief reference to the gardens visited must suffice this week, but further details respecting the numerous attractions of the various establishments are promised for another issue.—ONE OF THE VISITORS.



HARDY FRUIT GARDEN.

APRICOTS.—Those under glass copings and further protected with blinds, have set remarkably heavy crops, and other trees only roughly protected have also a good sprinkling of fruit. It is very unwise to leave large clusters of fruit to mature, as in this case it is of little value when ripe, and all the tree's energies will have been exhausted in their production. They ought to be freely thinned at once, leaving them at least 4 inches apart all over the tree. If extra fine fruit are desired they ought to be gone over again later on, and any deformed or rather small fruit removed. Only when set very irregularly should the fruit be left rather thickly. The least that can be done is to remove all that are placed where they cannot possibly swell properly, or those pressing against the wall nails and old spurs. Fruit taken from the trees before stoning commences, or any not much larger than ordinary marbles, may be used in pies by those who appreciate them. It is also necessary to thin out the shoots, especially at the highest part of the wall and under the copings, the reserved or best placed foreright growths being stopped at the fifth or sixth joint, while yet it can be done with the finger and thumb. Old trees are constantly losing large branches as well as numerous spurs on the live wood, and there is no preventing this. All that can be done is to anticipate the evil, one plan being to always have some young trees coming on to take the place of those in failing health. Another remedy, especially for the loss of spurs, is to lay in a number of young shoots in the same manner as Peach trees are treated. Well-ripened young wood produces the finest fruit, and being nearer to the walls earlier dishes are obtained than from projecting spurs. Now is the time to select a number of well-placed shoots, these being laid in either over or between the older wood.

WATERING AND SYRINGING WALL TREES.—The rainfall as yet has been very far below the average, and it is doubtful if some wall trees get enough moisture at the roots even during a comparatively wet season. Especially is this the case with those under much projecting copings, or which are against a wall near which Elms, Beech, and other large trees are growing. There is no doubt that a close examination of numerous wall borders would disclose the fact that they are much too dry at the present time. Apricots, Peaches, and Cherries in particular need watering occasionally, and even Plums and Pears against hot walls will pay for a little similar extra attention. The whole of the space between the walls and vegetable crops growing on the fruit borders ought to be loosened with forks, and some of the surface soil thrown back in order to just bare the roots. This renders the work of thoroughly soaking the border with diluted farmyard liquid manure or soot, or some kind of special manure more effectual. Next the roots should be placed a layer of partially rotten manure, and the surface returned on to this. The former will be kept in a moist state by the soil, and, in addition to enclosing the moisture in the border, will also be a good food supply for the roots to take possession of. Red spider usually follows in the wake of a long spell of clear days and cold days, and is already far too plentiful on the Peach and Apricot trees under fixed glass copings. Those improved copings with reversible action may in showery weather be so adjusted to admit of the rains washing the foliage, but the trees under the fixed coping must be frequently and heavily syringed, or otherwise the red spider will soon ruin the foliage, poor flavourless fruit being an almost sure consequence of this. A garden engine is of the greatest service for keeping down the red spider, and failing this the syringe must be forcibly used. If the nights are clear and cold the morning is the best time to damp them, but in warm weather it is advisable to syringe the trees both in the morning and also again towards evening. A good drenching should be given each time, this being a case where half measures are of no avail.

PROTECTED GOOSEBERRY BUSHES.—In many gardens the plan of fixing some kind of permanent protection over a quarter of fruit bushes has been adopted, it being found the cheapest and surest way of saving both the buds and fruit from the birds. Unfortunately these wire-netting-covered structures also exclude insect and grub-eating birds, and it may easily happen that caterpillars will do more harm to the trees than birds usually do. A bush badly infested with the grubs or caterpillars of the Gooseberry and Currant sawfly is quite stripped of leaves in a few days, and ruined for one season at least. All structures designed for covering a wall border or open quarter of fruit trees and bushes ought, therefore, to be so constructed as to admit of a portion of the fronts or sides being taken down or thrown open in some way as soon as they are in full leafage. Birds large and small, including our best friend the cuckoo, can then have free access to the bushes, and in country districts at any rate, will keep down the grubs. There is no necessity to uncover the roof, as they rarely enter in a downright direction, but soon find their way in and out at the front and sides. Cuckoos are naturally shy birds, and are busy among the fruit bushes early in the morning, and again when quiet is restored in the evening. One of these caught and placed in a "Gooseberry house" has been known to keep the whole of the usually much-infested bushes quite free from caterpillars.

CLEARING BUSHES OF CATERPILLARS.—Where the natural enemies of caterpillars are numerous very little trouble is experienced in keeping the bushes clear of those destructive pests, but during some seasons a great difficulty is felt in keeping them under in many instances. Preventive measures, such as the removal during winter of much of the surface soil containing the cocoons from which the fly emerges, surfacings of lime and fresh tan are effective, but are of no avail so late as this. The fly first appears during April or early in May, and quickly deposits a number of eggs on the under side of the Gooseberry and Currant leaves. In the course of a week the grubs hatch and commence feeding on the leaves, their presence being denoted by numerous tiny holes in the infested leaves. If these are detected in time, picked off wholesale, and destroyed, those few escaping will work but little harm, and may be destroyed in a short time. When the caterpillars have been allowed to spread over the bushes they are not easily got rid of. Flour of sulphur is a capital remedy, this being either freely mixed with water and syringed over the trees sufficiently often to well coat both the upper and under side of the leaves with it; or the sulphur may, with the aid of distributors, be well distributed over the trees when they are moist with dew. Sulphur does not injure the fruit in any way, and is less objectionable than hellebore powder and a few other remedies. Hot water, with just sufficient soapy water or soapsuds to make it "oily," freely syringed over the trees is another good remedy. The leaves in a young state will stand it as hot as 100°, and later on the heat may be increased to 120° without injury to aught but the caterpillars. Smartly tapping the stems of the bushes and shaking the branches will dislodge many caterpillars, which can be caught on a sheet and destroyed.

FRUIT FORCING.

PINES.—Under good management Pine plants as a rule yield the finest fruits when they show their fruit ten to twelve months from the time the suckers are first potted, but some allowance must be made for autumn-potted suckers, which have to make a part of their growth under adverse influence. Plants that were finally potted last September will now be showing fruit, and if not, means should be adopted to effect it. Plants of that age not exhibiting signs of fruiting should be subjected to comparative rest for a period of four to six weeks, lowering the heat at the roots to 75°, and admitting air fully at 75° to 80°, and let the temperature fall to 75° before closing the house for the day. Very little artificial heat will be necessary, but it must be afforded if necessary to prevent the night temperature from falling below 60°. The plants must not be allowed to become excessively dry at the roots, but whenever a plant needs it afford water liberally. The smaller suckers of the plants referred to potted this spring should be kept growing until the pots are well filled with roots, when, if it be necessary, the plants can be subjected to the same course of treatment as advised for the larger plants, and these will afford a successional supply of fruit.

The strongest suckers potted last March should be in their largest pots. If they are not yet potted no further delay should be tolerated, as to retain them longer in small pots is debilitating and detrimental to their after growth. Recently potted plants should have a regular bottom heat of 85° to 90°, and be thoroughly watered after potting, and no more should be given until the soil becomes dry, as it is necessary to exercise more care than usual at this stage, the state of the individual plants being ascertained before its application.

Young stock will be making rapid progress, and should be regularly attended to in every particular, allowing such plants sufficient space for development, as nothing is so inimical to sturdy plants as crowding them together in their early stages. Ventilate early in the day at 75° to 80° to render the foliage dry before it is affected by the sun. Discontinue shading successional plants, but for fruiting plants with the crowns in close proximity to the glass a slight shade from powerful sun will be beneficial.

MELONS.—*Earliest Plants in Pits and Frames.*—When fruits are ripening they should be fully exposed to the sun by raising them on inverted flower pots. Place a piece of slate for the fruit to rest on, or the moisture arising beneath will cause it to decay. Admit air freely, and water only to prevent the foliage flagging. If a second crop is desired encourage about four shoots from each plant from the base of the stems now bearing, so that when the fruit is cut the old growths may be removed and young shoots substituted. These will show fruit freely on the first laterals, every alternate lateral being rubbed off to prevent overcrowding. If a top-dressing of fresh compost be given, supplemented with a good supply of moderately weak liquid manure at 90°, the plants will be assisted to make a vigorous second growth. A useful crop of Melons may be obtained by making up beds now of any spent material, which from mixing and turning will generate a gentle warmth, placing over it frames that may have been used for Potatoes, bedding plants, &c., placing in each light about two or three barrowfuls of rather strong loam mixed with some old mortar rubbish or road scrapings if deficient of grit, and pressing it down firmly. Into this when warmed turn out a strong healthy plant, pressing the soil firmly about the roots, and giving a good watering. If pits are employed the surface of the soil must be about a foot from the glass, and if the weather be bright shade for a few days after planting. Seed may yet be sown to raise plants for frames at present occupied by tender bedding plants.

In Houses.—When the fruit is cut from the earliest plants the old stem should be cut back to a strong shoot near its base, removing as much of the surface soil as can be picked out from among the roots, replacing with rather strong lumpy loam pressed well down, and giving a good watering. A moist atmosphere being maintained and the plants syringed in the morning and about 4 P.M. they will soon start freely, showing fruit in much less time than by planting afresh. If, however, the plants are affected with canker, or from carrying too heavy a first crop, a deficiency of water or attacks of insects are much enfeebled, it is better to remove them, thoroughly cleansing the house, placing strong plants in ridges or hillocks as advised in former calendars.

The weather of late has been all that could be desired to produce Melons of a rich flavour. The days have been bright though the air has been cold, necessitating the employment of fires, especially at night, as it is a great mistake to allow too great a difference between the night and day temperatures. Maintain 70° as the minimum at night, though 65° or even 60° will do no harm when the nights are unusually cold and the days bright, 70° to 75° by day being secured artificially, admitting a little air at and above the latter, allowing an advance to 85° or 90°, closing at 80° to 85°, but not so early as to raise the temperature to 90° or 95°. Keep plenty of moisture in houses containing young growing plants or those swelling the fruit, gently damping the foliage, walls, floors, and closing at about 3.30 P.M., or as early as safe. Feed plants liberally that have their fruit swelling, not allowing them to suffer through deficient supplies of water, and afford weak liquid manure. Fertilise all pistillate blossoms daily to set the flowers or fruit, ensuring a somewhat dry condition of the atmosphere, not using the knife during that period, but pinch out the points of the shoots one or two joints beyond the fruit. Earth up the plants so soon as the fruit is set and swelling, and examine the plants frequently for the removal of superfluous growths, not allowing them to interfere with the principal foliage. Shade as little as possible, and only to prevent flagging.

PEACHES AND NECTARINES.—*Early Houses.*—Hale's Early, closely followed by Early Alfred and Early York, make a capital succession to Alexander, Early Beatrice, and other of the very early Peaches, they being very much superior in quality, and those are followed by Royal George (still the most certain kind for forcing) which is preceded by Dr. Hogg by about ten days, it being a good setter, with large beautiful fruit of good quality and somewhat firm flesh, which renders it a good traveller. Lord Napier is the best as regards size of the early Nectarines. Admit plenty of air to the ripening fruit in the daytime, and at night also if a prolonged succession of fruit is required. When the fruit is all removed resume syringing to free the foliage of dust and red spider. The borders must be maintained in a thoroughly moist state, as it is important that the foliage be kept healthy as long as possible. The trees after fruiting should have the wood which carried the fruit cut away to the shoot at the base for next year's fruiting, excepting those needful for the extension of the trees, and if the trees are too full of wood thin well, so as to admit light and air to the shoots, and thereby insure their thorough ripening.

Succession Houses.—No great amount of artificial heat will now be necessary except in cold and dull weather, when it will be necessary, especially when the fruit is taking the last swelling or commencing ripening, to admit of a free circulation of air. Remove any leaves that shade the fruit too much, so that it may colour perfectly at the ripening period. The tying-in of the shoots must be regularly attended to, stopping the laterals at the first joint, and any shoots that cannot be allowed to extend without crowding or encroaching on others stop at about 14 inches, exception being made of extensions. Shoots retained level with or past the fruit to attract the sap to it should be stopped to one or two joints at each break. Syringing must be vigorously followed up morning and afternoon to keep red spider under, and the inside border attended to frequently with water. Admit air early in the day, as with large panes of glass the sun often acts so powerfully on the foliage as to scorch it unless air has been previously admitted.

Late Houses.—Do not delay thinning the fruit. Very few more should be left after the fruits attain to the size of a walnut than will be required for the crop, up to which stage the thinning should be gradual, and avoid overburdening the trees, it being better to retain too few rather than too many fruits, as fine examples are always appreciated, whilst the indifferently swelled and quality-lacking are a source of complaint. It is a mistake to retain more shoots than there is room for; if the wood is not properly solidified as made, imperfectly formed buds result. Fumigate moderately on two or three consecutive evenings, having the foliage dry, for aphides, and for mildew dust with flowers of sulphur or use sulphide of potassium.

STRAWBERRIES IN POTS.—The early Strawberries have not been good. The lateness of procuring runners last season in consequence of the drought and its continuance, acted unfavourably on the plants after potting, so that they did not make and perfect as good a growth as was essential to the successful fruiting of the early forced batches. The succession Strawberries have been very much better, and are now affording good fruit. Copious supplies of water are necessary, especially in the early stages of swelling, for should the plants once lack that essential, the fruit may be so dried as not to swell kindly afterwards, and a somewhat moist condition of the atmosphere is necessary to obtain well-swelled berries, therefore avoid drying currents, especially of cold air. The plants should be watered two or three times a day according to the weather, and have liquid manure two or three times a week until the fruit commences colouring, after which give water only sufficient to prevent the foliage flagging. This, with plenty of air, is conducive of flavour.

PLANT HOUSES.

Calanthes—The earliest plants if in small pots will be ready for shifting, as they are now growing and rooting freely. This should not be delayed until the small pots are crowded with roots. When once they are allowed to get into this condition it is better to feed them than place them in larger pots. With timely potting the roots take freely to the fresh soil, and increased vigour is soon perceptible. Do not overpot these plants, for nothing is gained by so doing, but the reverse. The pots should be liberally drained, and the compost used of a light open nature. A suitable mixture is good fibry loam and peat in equal proportions, with the greater portion of the small particles removed, one-seventh of decayed manure passed through a fine sieve with charcoal and sand added liberally. After potting arrange the plants moderately close to the glass, and apply water carefully until they are rooting well in the new soil. Sturdy growth should be encouraged by admitting air judiciously, shading from the strong sun only. Later plants may be grown in the same structure, but be careful not to over-water those that have not yet made a fair quantity of roots.

Phajus grandifolius.—If these plants have been well cared for they will have passed the most critical stage of growth, and the roots should be extending freely in the pots. The young growths should be strong, and the expanding foliage free from spots. Too much water at the roots, and an injudicious use of the syringe in the early stages, are certain to spot the foliage and disfigure the plants for the season. Water may now be applied with greater freedom both to the roots and to the foliage, but be careful not to over-syringe them during spells of sunless weather. If possible grow them under the conditions advised for Calanthes. They can be grown well in a vinery, but are worthy of a better position if one can be found for them.

THE BEE-KEEPER.

THE MANAGEMENT OF SWARMS.

SWARMS may now be expected to issue. Where additional room is afforded swarming will be postponed, and, if room is continually given in advance of the requirements of the bees, obviated, unless the queen gives out in her egg-laying and so compels the bees, moved by the strong instinct of self-preservation, to raise a successor while there is yet time.

Every swarm should be fed for at least three days. This is a golden rule, and should never be broken unless combs of honey and empty combs are supplied in place of frames of foundation. In the former case the swarm at once becomes a stock and has a food supply; in the latter, the bees depend entirely upon their own exertions, and this, too, at a time when much honey is consumed in building comb or drawing out foundation. It may be urged that in

fine weather it is mere waste to feed a swarm. In practice, however, there is a manifest advantage in wise and judicious feeding. It gives a stimulus, and we may well believe encourages the bees to greater exertion. Plenty and laziness do not go hand in hand with bees. *Otium cum dignitate* is unknown to them. While an empty cell remains the bees will strive to fill it; therefore there is no necessity to fear—as some people seem inclined to do—that bees become lazy by assistance, and finding themselves assisted do not try to assist themselves. This argument—fallacious, ridiculous, and absurd—was seriously urged by an old bee-keeper, who had "observed"—or so he said—evil results from feeding. We ventured to suggest that in small hives a large supply of food given by a bee-keeper at a time when honey was coming in freely, might render the bees apparently lazy; but that they were in reality simply doing nothing, because they had nothing to do, the hive being glutted with honey. Overfeeding is a great injury to every stock. Extremes generally are injurious; but because unwise feeding leads to bad results it does not at all follow that judicious feeding will also be harmful. Now, the question is, What amount of syrup should be given to a newly hived swarm supplied with full sheets of foundation? We say that 10 lbs. of syrup distributed over one week is sufficient; but that if the weather presents any income from the fields a watch must be kept even after this amount has been given to see that the food does not run short. On the other hand, if the bees are able to work freely, and a plenteous supply of honey is coming in, less than 10 lbs. will suffice to give a swarm a start and to make them to draw out foundation and to start with good prospects on the "race that they must run."

If it is intended to extract from frames in the body hive, the greatest possible care must be taken not to extract "syrup" and to sell it as honey. In fact, with honey at present prices, we should feel inclined to feed every swarm with honey, and not run the remotest risk of having syrup in the cells; but if the combs are not to be passed through the extractor, less care is necessary. With careful watching, however, sufficient syrup may be supplied to enable the foundation to be drawn out without enabling the bees to store more than an infinitessimal quantity of syrup. In fact, in cases where sealed combs are available, and it is desired to feed with syrup and not with honey, we would suggest that a frame of sealed honey should be placed on either side of the brood nest, and then sufficient syrup supplied to enable the bees to draw out the foundation, but not enough to enable them to "lay by for a rainy day." The presence of the sealed combs prevents any chance of starving, and the bee-keeper is accordingly relieved from the anxiety which he might otherwise feel in feeding a spare quantity of syrup to a large swarm. These seem the general lines upon which this feeding of swarms should run. The individual may apply them and alter them, but he must bear in mind these facts:—

1, Without feeding, a swarm must die if bad weather immediately follow its issue and hiving.

2, Without a proper supply of food breeding is stopped by the inability of the bees to prepare cells for the reception of the eggs.

3, A little expense at the beginning brings a return in the end.

4, Syrup must never be extracted from the combs and sold as honey.

Feeding judiciously and at proper times is the golden key which unlocks the treasures of Nature. It opens to the bees the flowers of the field, and enables them to store their treasure house, and to yield to the bee-keeper a rich and plenteous harvest.—FELIX.

[In the last line of the first paragraph in the article on page 413 last week, for the word "bee" read "bird," and the sentence will be intelligible.]

TRADE CATALOGUES RECEIVED.

Hooper & Co., Limited, Central Avenue Covent Garden, London.—*List of Designs in Makart Decorations.*

TO CORRESPONDENTS

*** All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Pelargonium Leaves Spotted (*F. G.*).—To your question as to "Whether sour soil, overwatering, and want of drainage will cause the leaves to be spotted and curl," our reply is in the affirmative. No plants can be kept healthy under such unnatural conditions.

Insects on Liliums (*C. P.*).—The easiest and best way of destroying the aphides on your Liliums is to fumigate them with tobacco smoke. Two light applications on consecutive nights will be better and safer than one strong dose. If this is impracticable, dew them with the syringe, and dust them lightly with tobacco powder. After it has destroyed the aphides wash it off with the syringe.

Auriculas (*A. S.*).—The flowers sent are border Alpines, and to such varieties as these before us names are not given, as they lack the requisite characters entitling them to that distinction. They are none the less attractive in borders and on rockery mounds suitable for the growth of the plants. Named varieties of Alpines grown and exhibited in pots by florists are entirely different, and superior in form, substance, and colour.

Melons (*W. J.*).—The plants that have been injured by fumigation will be checked in growth, and the fruit will not ripen so early in consequence, and may not be so large and good as if no such misfortune had occurred. Still much may be done by encouraging the development of some young leaves, avoiding overcrowding them and the best of the others, then with good management in other respects we do not think failure need be apprehended.

Gladioli and Wireworms (*H. C.*). — The specimens you send are wireworms. When present in the soil they appear ready to take possession of almost all kinds of bulbs, tubers, and fleshy growths. All we can suggest in your case is to provide counterbaits in the form of Potatoes, Carrots, and squares of fresh dug turf, burying these amongst the Gladioli and examining them every two or three days. We have known more wireworms caught in squares of turf than in roots buried at the same time for alluring them to destruction.

Mushrooms in Ice House (*Reader*).—You ask if you can grow Mushrooms in a disused ice house during the summer months? We are unable to say, not knowing your experience as a Mushroom grower; but we know of beds in a very cool building, that would make an excellent ice house, just commencing to hear, and which will, no doubt, yield an abundant supply of fine Mushrooms during the next three months. They grow well in a temperature between 50° and 60°, indeed lower than that, but their growth is slower. Some of the finest examples we have seen this spring were cut from a mound in the open, the surface of which was often crisp with frost. A disused ice house ought to be an excellent place for growing Mushrooms in during the summer.

Chemical Manures (*R. M.*).—This subject has been treated so fully, clearly, and frequently in our Home Farm department that it is difficult how it can be better presented to the intelligent reader. Consult a few back numbers and refer to a reply on page 371 (May 3rd) on manuring fruit trees, and you will find more information than we can possibly give apart from that which has appeared. If you want a simple mixture for general crops, superphosphate of lime and nitrate of soda may be tried, the former at the rate of six or eight, the latter about two or three cwts. per acre; but the exact quantity can only be determined by the condition of the soil. Chemical manures lose half their value if applied late in the season, and a term of hot dry weather follows, or rather the current crops do not absorb half their virtues.

Name of Insects (*W. R.*).—Your No. 1, the solitary specimen, is a centipede, Lithobius forficatus, not uncommon in gardens and houses, nearly related to those species which cause so much annoyance or peril to residents in hotter climates than ours. De Geer, having had this insect under close observation, gives it as his opinion that the bite is venomous, but it is doubtful whether the jaws can pierce the human skin even of a child. It kills and sucks the juices of many other insects, some larger than itself, the food not being vegetable. The other specimens (No. 2) belong to the too abundant species, Julus terrestris, a millipede of mixed diet. Probably the Julidæ feed chiefly on small insects, worms, and slugs, but they will also attack the roots of vegetables and hide in bulbs, doing much injury. Their destruction is often attempted by the application of soot, lime, nitrate of soda, and

diluted petroleum ; their vigour, however, is considerable, and their ingenuity also in concealing themselves.

Plants for the Conservatory—Roses in Pots (*W. S. S.*).—If you had stated what convenience you have for growing plants other than the conservatory we should have been in a position to have given you a useful answer. If you write to us again stating your wants, with the additional information we require, we will gladly assist you. You can pot the Roses directly they have ceased flowering, provided they require only the removal of the drainage and shifting into larger pots without further disturbing the roots. The condition of the soil in which they are growing must guide you in this matter. If the soil is sweet, and you do not object to larger pots, they can be potted at the time named. By so doing they will be well established before the winter and in good condition for another year. If the soil is sour and the pots as large as you desire, you would have to reduce the ball by one-third or one-half of its present size. To do this directly after flowering might prove injurious, and it would be better not done before the end of July or beginning of August. Roses will do in the same pots for several years if liberally supplied with stimulants. The best practice, however, is to turn them out of their pots at the time stated, carefully reduce the balls one-third, and repot them in the same size pots. This insures good drainage, and provides food without recourse to stimulants. After the operation has been done the plants should stand in the shade for a fortnight and be liberally syringed to preserve their foliage in a fresh healthy condition to encourage root activity. For H.P.'s a suitable compost is good fibry loam with one-seventh of decayed manure added, with a 6-inch potful of quarter-inch bones, and the same quantity of soot to each barrowful of soil. If the loam is heavy add a liberal quantity of coarse sand ; if light, a small quantity, or perhaps none will be needed.

Evaporation from Soil (*W. R. R.*).—Undoubtedly evaporation is accompanied by a lowering of temperature of the surface, through which moisture in the form of vapour escapes, and ice can be formed in summer accordingly. But in practical culture the escape of moisture from the soil by evaporation at certain seasons is advantageous, hence the beneficial effect of east winds in drying wet ground by evaporation in spring and rendering it amenable to tillage. The surface of the earth may be cooled somewhat during the process, but that is, at the time, and under the circumstances, the lesser of two evils, the greater, leaving the surface soil in a state of saturation. Loosening the surface soil—that is, exposing more and more of that below which is moist, in dry weather, and as the original surface dries, favours evaporation. If you place a quantity of wet soil on a bench in a dry potting shed, spread it out, and as often as the surface dries stir it to expose the damp particles below to the dry air, the bulk of the soil will be ready for use sooner than if it were pressed into a mass with a smooth firm surface and left undisturbed. In the most profitable market garden culture men are constantly employed in stirring the soil amongst Cabbages and Lettuces in dry weather in spring, not for killing weeds, because there are none, but for favouring the escape of moisture and admitting the air. This brings the crops a few days or a week earlier into the market, making a difference of £20, and often a good deal more, in their value per acre. If plants in pots are overwatered through ignorance or by accident, and are thereby endangered, stirring the soil is resorted to for favouring evaporation, and most gardeners know that Cucumbers, Melons, and other tender stemmed plants have been saved in consequence. A layer of loose dry soil in summer also arrests evaporation, but this would not be so if the soil were frequently stirred, each time bringing some of the moist earth below to the surface to become quickly dried, as obviously more moisture would then be extracted from the soil by evaporation in the process. Stirring the soil and maintaining a loose surface may therefore favour and arrest evaporation according to the manner in which the work is done. Sometimes we desire to promote and sometimes prevent the escape of moisture from the soil, and we act accordingly. We know the sandy Strawberry field very well to which you refer, and fail to see that it affords evidence in conflict with the teachings in the work you mention ; and if the practice of the author is right, we do not quite see this proves his reasons for it very far wrong. There is no doubt much to be said on your side of the question, and if you have no objection to discuss the matter in our columns with the author of the paragraph that does not represent your view of the case, we will readily afford the opportunity.

COVENT GARDEN MARKET.—MAY 23RD.

MARKET quiet owing to the holidays, with prices lower.

VEGETABLES.

	s.	d.		s.	d.		s.	d.		s.	d.
Artichokes, dozen	1	0	to	2	0	Lettuce, dozen	0	9	to	1	3
Asparagus, bundle	1	0		4	0	Mushrooms, punnet	0	6		1	0
Beans, Kidney, per lb.	1	6		0	0	Mustard and Cress, punt.	0	2		0	0
Beet, Red, dozen	1	0		2	0	Onions, bunch	0	3		0	0
Broccoli, bundle	0	0		0	0	Parsley, dozen bunches	2	0		3	0
Brussels Sprouts, ½ sieve	0	0		0	0	Parsnips, dozen	1	0		0	0
Cabbage, dozen	1	6		0	0	Potatoes, per cwt.	4	0		5	0
Capsicums, per 100	1	6		2	0	,, Kidney, per cwt.	4	0		0	0
Carrots, bunch	0	4		0	0	Rhubarb, bundle	0	2		0	0
Cauliflowers, dozen	3	0		4	0	Salsafy, bundle	1	0		1	6
Celery, bundle	1	6		2	0	Scorzonera, bundle	1	6		0	0
Coleworts, doz. bunches	2	0		4	0	Seakale, basket	0	9		1	0
Cucumbers, each	0	4		0	7	Shallots, per lb.	0	3		0	0
Endive, dozen	1	0		2	0	Spinach, bushel	1	6		2	0
Herbs, bunch	0	2		0	0	Tomatoes, per lb.	1	6		2	0
Leeks, bunch	0	3		0	4	Turnips, bunch	0	4		0	0

FRUIT.

	s.	d.		s.	d.		s.	d.		s.	d.
Apples, ½ sieve	2	6	to	4	6	Oranges, per 100	4	0	to	9	0
Nova Scotia and Canada barrel	10	0		18	0	Peaches, dozen	12	0		20	0
Cobs, 100 lbs.	45	0		0	0	Pears, dozen	0	0		0	0
Grapes, per lb.	2	6		5	0	St. Michael Pines, each	3	0		5	0
Lemons, case	10	0		15	0	Strawberries, per lb.	2	0		4	0

PLANTS IN POTS.

	s.	d.		s.	d.		s.	d.		s.	d.
Aralia Sieboldi, dozen	6	0	to	12	0	Genista, per dozen	6	0	to	12	0
Arbor vitæ (golden) dozen	12	0		24	0	Heliotrope, dozen pots	6	0		9	0
Arum Lilies, dozen	6	0		12	0	Ivy Geranium	4	0		8	0
Cineraria, dozen	6	0		10	0	Hydrangea, dozen	9	0		18	0
Coleus, dozen	3	0		6	0	Lilies Valley, dozen	12	0		18	0
Cyclamen, dozen	12	0		18	0	Lilium Harrisii, doz. pots	30	0		42	0
Deutzia, per dozen	6	0		9	0	Lobelia, per dozen	4	0		6	0
Dracæna terminalis, doz.	30	0		60	0	Marguerite Daisy, dozen	9	0		12	0
,, viridis, dozen	12	0		24	0	Mignonette, per dozen	6	0		12	0
Erica, various, dozen	9	0		18	0	Musk, dozen pots	2	0		4	0
,, ventricosa	18	0		24	0	Myrtles, dozen	6	0		12	0
Euonymus, in var., dozen	6	0		18	0	Nasturtiums, per dozen	4	0		6	0
Evergreens, in var., dozen	6	0		24	0	Palms, in var., each	2	6		21	0
Ferns, in variety, dozen	4	0		18	0	Pelargoniums, dozen	6	0		18	0
Ficus elastica, each	1	6		7	0	,, scarlet, doz.	4	0		6	0
Foliage Plants, var., each	2	0		10	0	Spiræa japonica, doz.	6	0		12	0
Fuchsia, dozen pots	6	0		12	0	Stocks, per dozen	3	0		6	0

CUT FLOWERS.

	s.	d.		s.	d.		s.	d.		s.	d.
Abutilons, 12 bunches	2	0	to	4	0	Lily of the Valley, 12 sprays	0	6	to	1	0
Aneuome (Fulgens), 12 bunches	3	0		6	0	Mignonette, 12 bunches	3	0		6	0
Anemones 12 bunches	1	6		4	0	Narciss, various, 12 bchs	2	0		4	0
Arum Lilies, 12 blooms	2	0		4	0	Pansies, 12 bchs	1	0		2	0
Azalea, 12 sprays	0	6		1	0	Pelargoniums, 12 trusses	0	6		1	0
Bouvardias, bunch	0	6		1	0	,, scarlet, 12 trusses	0	4		0	6
Camellias, 12 blooms	1	0		3	0	Polyanthus, 12 bchs	1	0		3	0
Carnations, 12 blooms	1	0		3	0	Primroses, 12 bunches	0	6		1	0
Cowslips, 12 bunches	0	9		1	6	Roses, Red, 12 blooms	2	0		6	0
Cyclamen, 12 blooms	0	4		0	6	,, (indoor), dozen	0	6		1	6
Daffodils, Double, 12 bchs	2	0		4	0	,, Tea, dozen	1	0		2	6
,, Single, 12 bchs	1	0		3	0	red, dozen (French)	0	0		0	0
Daisies, 12 bunches	2	0		4	0	,, yellow	2	0		4	0
Epiphyllum, 12 blooms	0	0		0	0	Spiræa, bunch	0	6		1	0
Encharis, dozen	2	0		4	0	Stephanotis, 12 sprays	2	0		4	0
Gardenias, 12 blooms	1	6		4	0	Stocks, 12 bunches	1	6		4	0
Hyacinths, French, 12 bunches	0	0		0	0	Tropæolum, 12 bunches	1	6		2	0
,, (Dutch), box	1	0		0	0	Tuberoses, 12 blooms	0	9		1	0
Lapageria, coloured, 12 blooms	1	0		1	6	Tulips, dozen blooms	0	3		0	6
Lilium longiflorum, 12 blooms	2	0		4	0	Violets, 12 bunches	0	0		0	0
Marguerites, 12 bunches	2	0		6	0	,, (French), bunch	0	0		0	0
						,, (Parme), bunch	0	0		0	0
						Wallflowers, 12 bchs	2	0		4	0
						White Lilac, per bunch	5	0		6	6



AGRICULTURAL DEPRESSION.

STRANGE, most strange it is, that anyone paying ordinary attention to passing events should by any possibility take a wrong view of the cause and remedy of the agricultural depression. Yet we not unfrequently hear the most extraordinary reasons advanced for it, and which are altogether beside the mark. The work of our great agricultural societies is mentioned with a sneer ; the value of the teaching at Cirencester and Downton is not simply questioned, but, with the presumptuous folly of that outspoken conceit which is the invariable concomitant of ignorance, it is termed worthless. Agricultural experiments, too, come in for a full share of condemnation, while chemical manures are said to have poisoned the soil, to have rendered it barren and worthless, and to have contributed more than anything else to the ruin of farmers. It was only a short time ago that we were assured a thousand acres of soil had been rendered worthless for agricultural purposes by the use of nitrate of soda, and one of our own bailiffs objected to the use of fish salt as a manure because he thought it caused the soil "to run together and become hard." Yet this very individual has for the last three years been using potash and other salts extensively under our direction with very profitable results, but then he had never heard the term of salt applied to them.

Well, now, the only way to contend with such ignorance, if we notice it at all, is not by mere argument, but by the irrefragible proof of tangible results. At a meeting of the members of a farmer's club for a discussion of the relative value of manures, we

had been telling them, among other things, of the wonderful crop of Barley obtained at Flitcham Abbey by the use of muriate of potash, and we were much amused by one of them farming the land of an entire parish himself, who after declaring farmyard manure to be the sheet-anchor of farmers, turned to us with the question, "What *is* muriate of potash?" He was evidently impressed by Mr. Cook's success, and it is just possible he is a purchaser of considerable quantities of potash this season. The most remarkable effects of potash is, however, not always perceptible in the crop to which it is applied, but rather in those of the following year or two. But we must not wander from our subject, and will reserve some remarks bearing upon the results of the use of manures for another paper.

If proof were really required of the good work done by our Agricultural Societies we have only to turn to recent issue of the journals of two of them. The Journal of the Bath and West of England, in addition to sixteen lengthy reports and papers on as many important subjects connected with agriculture, has numerous short pithy papers on such subjects as "The Phenomena of Animal Life and Vegetation," "The Wheat Crop of 1887," "The Pig of the Future," "Seeds for Permanent Pasture," "Butter Making," "Management of Farm Horses, &c." The Journal of the Royal Horticultural Society has many important articles; but if it only contained the reports of chemical analyses of manures, seeds, and oil cake it would be invaluable, for there it undoubtedly exposes an evil that has done material harm to the confiding British farmer. It is solely owing to this great Society that we are now able to procure pure seeds. In the eighteenth volume, published in 1882, there appeared a paper by Mr. Faunce de Laune on "Laying Down Land to Permanent Grass," in which he said:—

"I found, however careful I was in my orders, and from whatever seed merchant I ordered my seeds, the per-centage of Rye Grass, soft woolly grass, and other bad grasses and weeds, was beyond all belief. I found in a piece of land 8½ feet square about six plants of Cocksfoot, one Foxtail, two Meadow Fescue, five or six Crested Dogstail, and the rest Rye grass, soft woolly Grass, perennial Clovers, and weeds. I then got an introduction to Mr. Carruthers, and by means of his able help and valuable information, was enabled to make closer experiments. From these I learnt that good seed was most difficult to get; and to illustrate how difficult, I will give some of my experience. I had five acres of very valuable land I wished to sow with permanent grass for seed; the land was not only very good, but very highly manured and absolutely clean, having been a Hop garden. I divided this field into three parts, one to be sown with Cocksfoot, the second with Meadow Fescue, and the third with rough Meadow Grass I ordered, with special care, the three kinds of seed from one of the great seed merchants, and looked forward next year to a good crop of seed, not suspecting that when seed was especially ordered of a particular kind from a firm of repute it would be anything but good. But after a few weeks' growth, although I was satisfied that the Cocksfoot was true, my suspicions were aroused about the others, and I sent some of the seed that was left to be examined by Mr. Carruthers. To my great amazement I was told the Meadow Fescue was all Rye Grass, and the Rough Meadow Grass all Smooth Meadow Grass. There was nothing left for it but in the best way possible to destroy all the grass and resow it." He adds further on, "I have since these experiments never sown any seed except after the sample had been examined by Mr. Carruthers, and have, in consequence, obtained results most satisfactory to myself."

We might proceed to quote examples of an equal amount of good work done in the analyses of manures and oil cake, for the last number of the Journal contains no less than thirty pages of cases of adulteration, all which show clearly how heavily farmers have suffered from putting themselves in the hands of unscrupulous dealers. The fact is, however, sufficiently notorious, yet we fear even now that much so-called pure cake and special manures are comparatively worthless.

WORK ON THE HOME FARM.

As we write the weather is delightfully mild, and gentle rain has been falling for twelve hours or more. Nothing could possibly be more opportune than this change from cold dry weather, for the spring corn, Kohl Rabi, Mangolds, and Swedes were all ready for it, and the grass reserved for hay will also derive much benefit from it. It is true the rain prevents the finishing of corn-hoeing, but we do not mind this, for we have had an exceptionally favourable time for the destruction of weeds, and full advantage has been taken of it, so that we look forward confidently to full corn crops this year. It must not be forgotten that weeds among root crops will grow freely now, and we must resolve to get them under before haymaking begins. That important work will certainly be late in the season this year, and we shall have to push on briskly when we do begin in order to be ready for corn harvest. The grass mowers have already been sent in to the ironworks to be thoroughly overhauled and put in order, and we advise our readers to send in their machines if they are at all faulty, for every hour is precious when the haymaking begins, and all that is possible should now be done to prepare for it. To intending purchasers of new grass mowers we strongly advise preference to Hornsby's machines, simply because after a trial of several we have found none equal to them. These machines are compact and strong, and they have a very strong connecting rod which seldom if ever breaks. It is wise to have duplicate parts of the machine which are most subject to wear and tear and to risk of breakage. By attention to these simple matters of preparation and precaution we were able to mow from 200 to 300 acres of grass last season at the rate of 10 acres per machine daily. Stones have been picked, and fallen twigs and branches picked and raked up under timber trees, both for safety to the mowers and for the sake of the hay.

Food for sheep is now becoming abundant, and it has caused the price of store hoggets to have an upward tendency. Fat hoggets, too, have met with a brisk sale at good prices, and we have been selling some clipped ones at profitable rates. To do this advantageously so early there must be snug yards and sheds, with plenty of sound nourishing food. We are fortunate in having such shelter, and the food has consisted of coarse lamb food, chaff, and Mangolds.

BRITISH TOBACCO CULTURE.

In the admirable report of the competition for the prizes offered by the London Chamber of Commerce for British grown Tobacco in your issue for May 16th, there is one point we would ask you to be good enough to allow us to explain. It reads as follows:—

"None of the samples submitted were in a merchantable condition, so that it would appear that English growers have still a great deal to learn, especially as regards curing."

We would state that Tobacco of the crop of 1887 could not possibly be in a merchantable condition on May 1st, 1888.

If it was intended to convey that the Tobacco should be in a merchantable condition, by which we understand in a condition to go into the hands of the manufacturer, or the broker, from the producer, the competition instead of taking place on May 1st, should have been delayed until September 1st, when the Tobacco would have passed through what is familiarly known in America as the "May sweat," and would ultimately have reached the mature stage it is supposed to attain before going into the hands of the broker or manufacturer.

This we feel sure you will recognise is an important point and sufficiently interesting to justify our asking you to insert this letter for the informationy of your readers.—James Carter & Co.

[Undoubtedly the point is important, and ready insertion is given to the explanatory communication.]

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE. 1888. May.	9 A.M. Barometer at 32° and Sea Level.	Hygrometer. Dry.	Hygrometer. Wet.	Direction of Wind.	Temp. of soil at 1 foot.	IN THE DAY. Shade Temperature. Max.	Shade Temperature. Min.	Radiation Temperature. In sun.	Radiation Temperature. On grass	Rain.
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 13	30.218	56.0	48 8	S.W.	51.4	71.1	40.1	116.0	36.4	—
Monday..... 14	29.871	50.5	44 6	N.W.	52.7	60.4	44.1	110.1	38.3	—
Tuesday 15	29.718	52.1	44.2	E.	52.3	63.6	41.6	104.3	35.1	—
Wednesday.. 16	29.576	58.4	51.4	S.E.	52.2	62.9	42.3	101.9	35.4	0.334
Thursday 17	29.607	54 7	52 8	S.	51.8	61.7	50.5	73.0	48.0	0.257
Friday 18	29 802	58 6	55.7	E.	52.2	75.5	54 3	117.0	52.7	—
Saturday 19	29.706	69.3	61.6	E.	54.0	77.2	57.2	113.8	51.4	—
	29.785	57.1	51.3		52.4	67.5	47.1	105.0	42.5	0.571

REMARKS.

13th.—A lovely summer day; the first with temperature above 70°.
14th.—Bright early; generally cloudy after 10 A.M.
15th.—Generally hazy, and frequently cloudy; but bright at times.
16th.—Cloudy morning, wet afternoon, damp evening.
17th.—Continuous rain till 3 P.M., then damp and showery.
18th.—Dull and damp early, gradually cleared, and bright and hot after 11 A.M. Lunar halo at night.
19th.—Close, hot, and frequently cloudy. Thunder heard in the neighbourhood in the afternoon.

Although Wednesday and Thursday were wet and uncomfortable, the rest of the week was extremely pleasant, and Friday and Saturday were quite summerlike.—G. J. Symons.

STRAWBERRY RUNNERS AND FORCING.

CAREFUL watering, steady forcing, judicious ventilation, and other cultural requirements are unquestionably of great importance in the culture of forced Strawberries. But these are of but little avail if the grower has plants with small unripened crowns. Fine large fruit does not entirely depend upon the treatment the plants receive while they are in the forcing house, although this is essential to success; but it is dependent mainly on a good start, for without strong plants with well-ripened crowns fruit of first quality will not be produced.

Young plantations made early last August, and made firm in the ground directly signs of growth were visible, and the ground well mulched at the same time, will now be growing vigorously. The first runners are now showing, and the flower stems that are pushing up strongly from the centre of the plants should be removed. The past dry weather has been the reverse of favourable for rapid growth, and early mulchings have already proved beneficial. Plants could not have looked more promising even had they enjoyed showery weather. When the flower stems are removed the plants can devote all their energies to growth and the production of early runners. If the ground in which they are growing was in a good fertile condition at planting time a soaking of clear water will help them wonderfully. If the soil was not liberally supplied with manure before planting, or rendered sufficiently rich by that used for mulching, liquid manure in a weak state may with advantage be given now. Where liquid from the drainings of the manure heaps does not exist, a little artificial manure may be used, and even this will do no harm, but the reverse, if the land was in good condition at planting time. I have found this to be the quickest and most economical method of feeding the plants, or for exciting them into vigorous growth for producing strong runners early. When liquids have to be carted a distance and then diluted with water the labour soon amounts to more than the cost of artificials, that act equally well, if not better. The effect of suitable artificial manures acts almost magically upon the plants in producing strong early runners, which are so desirable for the purpose in question.

Those who have followed my previous writings are perfectly aware that liquid manure has not for years been applied to fruiting plants during forcing. When used it must be discontinued directly the fruit shows signs of colouring, just when the plants need most support. This can be given by artificials without fear of injury to the fruits, either as regards their flavour or appearance. If the plants have been well treated, and are given the last dose of artificials when the first fruits are colouring, hundreds of white roots will quickly appear on the surface to take in the food provided. Their appearance shows at a glance the healthful condition of the roots, and if they did not need the food they would not appear so freely and quickly on the surface for it. Roots of plants in pots fed with liquid manure of any description do not so readily come to the surface; they have a tendency to leave it and make their way out through the drainage. If there is anything in which they can root they soon form a large quantity of fibres outside in comparison to what plants will if fed by artificials. Yet strong doses cannot be too much condemned. Most artificials if given in too large quantities do more harm than good. A little applied frequently is the secret of success. The first application should be given directly the fruit is thinned, and then weekly until they reach the stage already stated.

Notions that should have been obsolete long ago about top-dressing are still thoroughly and firmly believed in. Those who have practised top-dressing with light rich material prior to starting the plants, and observed its effect upon them in their later stages of development, cannot well conceive that practitioners should still believe that such a course is liable to promote leaf growth at the expense of fruitfulness. If too much foliage is pushed up at the start the evil must be traced to other causes, and the most general ones are, either forcing them too quickly in their early stages or the unripened condition of the crowns in autumn. Some kinds, of which Sir Joseph Paxton may be noted, are very liable to do this, and therefore those who wish to have full crops of this variety must have good runners early, so as to insure the crowns being thoroughly matured. Top-dressing after the fruit is set does not do half the good as is the case when done early. When done at starting time the roots take possession directly the plants start growing, and these in consequence throw up stout healthy flower stems that stand well above the foliage.

All those who have grown Strawberries know the ruinous effect of allowing them to become dry when the fruit is swelling, and this has often led to the opposite evil of giving them too much water. When grown in small pots, say 5-inch, and arranged on shelves near the glass, we are told they must be watered two and three times a day. I cannot think such treatment good for any plant. When the sun has considerable power, and the fruit set, they swell better some distance from the glass, where, instead of the fruit being exposed unnaturally to full sunshine, they can be partially shaded by their own foliage. Where the shelves are close to the glass the only chance is to turn the fruit from it. I have said watering two or three times a day is not good for any plant—crippled fruit during the setting period, a sodden condition of the soil, and unsatisfactory root activity are the results. Good fruits are and have been produced by such methods, but there is some uncertainty about the system, as we have felt for years while practising it, and much, very much, of the success attained, or the reverse, is dependent upon the man in charge. Under a good reliable man all may go well, but under the care of a thoughtless careless person all may go wrong. Success should not be solely dependent on those entrusted with the application of water to the plants. How can this state of things be altered, and labour in watering saved, with a greater certainty of success? is only a natural question to ask. The difficulty has been solved, and a plan that has been found serviceable will be more largely practised another year if I still remain in charge of these gardens. The shelves, narrow ones, will all be so arranged by nailing a board on each side and at the ends, so that the pots can be plunged as far as practicable to the rim in ashes, cocoa-nut fibre refuse, or any similar material. Filling in between the pots as they are arranged is work that can be done quickly, and making the shelves so that they will hold the plunging material will not take much longer. This can all be done at the season of the year when work does not press so heavily as during the months of April, May, and later. This system will insure the roots of the plants from injury by the exposure of the pots to the sun, and what will be the watering compared with the present system of growing them with the pots exposed? Some plants plunged to the rim in January only needed watering twice up to the time they came in flower, while another lot of plants arranged for the purpose of testing the matter needed attention daily, and some days twice, from the time the flower spikes first made their appearance. Plunging the pots will insure the soil being in a uniform condition of moisture, which must prove beneficial to the plants, save labour, and insure success with half the care and responsibility to those in charge. Have glazed pots been tried for Strawberries?—W. BARDNEY.

BELGIAN WORK AND WAYS—DIGGING.

In a previous communication reference was made to the circumstance of far more workers being visible on the land in Belgium than in England. It is quite within the limits of the strictest accuracy to say not that ten, but certainly more than twenty times the number of persons were seen working in fields between Antwerp and Ghent, on about forty-three miles, than between London and Harwich, which is, perhaps, half as far again. There are two lines of railway between the two Flemish cities—namely, the Pays de Waes route, before alluded to as starting from the Scheldt, opposite the landing place from the steamer, this being a private or "company" line; and the State railway, starting from the opposite side of the city, the station de l'Est, which is about a mile from the quay. This is a comparatively new and direct route, formerly travellers having to go *viâ* Malines and change there or somewhere else; but by what may be called the Boom route there is no change, and the second class fare is about 3s. 6d.

I had read that the old Pays de Waes line traversed the district of small holdings, where spade culture was supreme and every inch of land made to yield a reward for honest labour. No doubt the majority of the holdings are very small, plots of a few acres only, and tillers of the ground very numerous; but having travelled by one line to Ghent, and by the other back again, and forming an opinion from the not too quickly moving train, I thought the busiest scene and the best work was in the district through which the State line runs. A few years ago I passed through a district of "small culture" a little further south, between Brussels and Waterloo, and was greatly disappointed. The land was light, very sandy, and not by any means well worked. Potatoes were being taken up, miserably poor crops, women appearing to do nearly all the work, while vacant land was being scratched over with an apology for a plough, and horse to match, while the human workers showed to great disadvantage with English peasantry as a rule. I think possibly I saw "small culture" in its worst aspect there, and now I am inclined to surmise I have witnessed it in its best form, and at another period of the year—planting instead of reaping time, or the Potato setting period—and this might account for the number of persons employed, as for miles they appeared to be almost as thick as gleaners in an English Wheat field in the autumn.

I suppose any person who has gone through the mill of gardening in every phase, and who has learned to use the spade as deftly as the pruning knife or pen, knows in a moment as soon as he sees a man "handle" an implement whether he understands it or not. It is painful to see young men who have been brought up in the houses all their time, and become expert potters, plant trainers and table decorators, and whom fortune has not favoured with a continuation of such "light employment"—it is painful, I say, for an old hand to see their ungainliness when necessity compels them, as is often the case, to use the spade and other garden tools, which they may have thought were only fit for labourers. The work in such case is truly hard, whereas it would have been comparatively easy had they learned in the school of practice the right way of doing it. This every young gardener should do, and never rest contented till he can do every kind of work in a garden as well as an expert labourer can do it, and a little better if possible. He will then be provided for emergencies, and if he has never to dig or trench, and do ordinary outdoor work, the men under him who do it will respect him the more, and readily bow to his authority when they see, as they are quick to do, there is someone over them who "knows his business." This is a digression, but not, after all, very foreign to the subject, even if that subject be digging in a foreign land, for if a lesson useful in its tendency cannot be derived from a narration, or a suggestion thrown out by the way that may be of possible service, it is small use narrating.

And now to the Belgian diggers. The first thing that strikes a stranger is to see women using the spade as well as men, not merely pottering about with it, as is the case in this country when they venture to "help in the garden," but doing downright good work, and doing it as well, and as much of it, also apparently as easily, as the masculine workers. The implements, as they were driven boldly in the land and withdrawn with a clean turn over, glittered in the sunshine—clear evidence that their value was known, and that pride was taken in the digging. It is conceivable that there are kid-gloved dandies who cannot see what there is to be proud over in spades and spade work. Well, so much the worse for them if they hope to become gardeners. A gardener who cannot dig—and there are hundreds of probationers who appear to have no great desire to learn—is ignorant in the very elements of his calling. I have never seen a man who did not cherish his tools and keep them bright and clean who was a good workman. Digging can no more be well done with a rusty spade than pruning can with a dull knife. The Belgian diggers keep their spades bright and do the work the better and the more easily on that account. There are "lucky men" in the gardening world no doubt, men who have had friends to help them onwards, and it may be hoist them upwards, but no one should rely on patronage, which is a lottery of one prize to a thousand blanks. The safe course for a man to pursue is to strive for excellence in every kind of work, and never to rest contented so long as he sees a fellow worker surpass him. If he is earnest in that respect he will not only train his hand and his eye, but strengthen his brain, and become a good deal more than a mere delver—an intelligent worker. I have been reading with pleasure some articles in the Journal of late by Messrs. Dunkin and Coombe on artificial manures, and I dare venture to say that the writers of those articles are real workers. Their perseverance in searching for knowledge, their watchfulness for the results of practice, and the absence of "showiness" in formulating their opinions, indicate to me at least that they are not mere surface scratchers; but when they dig do it with a will and keep their spades bright. If I had a good garden, and wanted a good gardener to manage it, I dare engage either of those men; but I do not, as my man can dig as well as a Belgian peasant, and he does not do his work the less well for knowing that I can "take a turn" without knowing it. The lesson I wish to impress on all young aspirants to fame in the world of gardening—a world of labour and delight, is to be earnest, to think of no kind of work as worth no thought and care; but if digging is to be done take a pride in it and do it well, and if anyone thinks the worse of them for that, depend on it his acquaintance is not worth cultivating, and he may be regarded as either a drone or a snob. Every man in the gardening ranks who has achieved a good position solely by his own endeavours was, so far as I know, an industrious worker in his earlier days, and did not allow anyone to excel him in whatever was in hand. His spadework was as well finished as his table decorations, and as the plans he so carefully drew to scale for landscape work and buildings. Am I forgetting the Belgian diggers? No; only wandering from them for a few moments, but not from the subject, and now return for a few more moments to the men, women, children, dogs, and water barrows in the fields.

Water barrows in April, what can they be for? We do not see them dragged about on the land at home at that season of the year. They are for conveying liquid manure, sewage, slops, and refuse of every kind that can be collected for enriching the land. Nothing appears to be allowed to run to waste and to pollute watercourses; and it is observable the sewage is applied before the crops are growing. The wrong time, some may fancy; but if there were anything very wrong about it would it not have been found out long ago by the busy workers whose livelihood depends on what they put in the land, for obviously money must be placed in a bank before it is drawn out? Such applications do good at any time whenever the surface of the ground is dry enough to facilitate the transport of the fertilising medium, and it is far better to apply it then than to let it accumulate and poison the air and be wasted at the same time. A sturdy dog harnessed to the barrel on wheels drags it along as if he enjoyed the work, the man behind giving a helping hand. Those who have no dog help place their barrels in a barrow and trundle them along. Women seem to be as apt at barrow work as men, and spread manure in the trenches, children dropping in Potatoes, and the more able-bodied dragging the earth over them with a heavy-looking hoe. It may be added that the sewage from the cities is carted away nightly in railway engine-like vessels, it being drawn into these through hose with pumps. It is a curious process, and offensive enough in Ghent after midnight; but in Antwerp the appliances seem better, yet the same kind of nocturnal work goes on continually. But we must return to the digging.

In the district in question the workpeople were in trenches, about two spades wide, and appeared to be turning up the soil about the same depth—bastard trenching, perhaps, but when we particularly wanted the train to stop to enable a closer examination, it seemed to move the quicker. In the finish of beds good workmanship was particularly noticeable. Long stretches of them were passed here and there, but what was in them I know not. They were about 4 feet wide, as level as a floor, and not only were the edges lined off without kink or flaw, but the line appeared to have been set back about 4 inches, and that portion smoothed—a sort of beading being formed in the line course. The neatness was very remarkable, and although the crops would neither be better nor worse for the fancy indulged in, it clearly showed the difference between careful and slovenly work. It reminded of the exactitude of the rows of upspringing corn in the best agricultural districts of England, where prizes are given to drillmen for the excellence of their work. Practically no more time, and often not a minute more, is occupied in doing work well, and in such a way that the eye rests on with pleasure, than doing it in a slipshod and unworkmanlike manner that gives no satisfaction. The best workmen I have met were usually the quickest, or at least could get through as much as the "rough hands;" and the rule holds good both in the workshop and the garden. As regards work with the pen, perhaps I had better "sing small," because some of my friends tell me they cannot read my writing; but the printers can, which seems to suggest that there is something to be learned by those readers who confess their failure.

We will now for a time link the spade with the plough. In the well tilled Belgian campagne through which we are passing some of the holdings comprise ten or twenty acres I was told, and it is the custom to turn a third or fourth of the land up deeply with the spade every year, the remainder being worked with the plough. This means that the whole is either very deeply dug or trenched every three or four years. There can be no question in my mind as to the value of this practice in two important respects—namely, in providing employment for men, and in enhancing the value of crops, thereby making the labour remunerative; and with otherwise good management the work *is* remunerative, but it is, or ought to be, clear to all cultivators that it is wealth wasted to improve the ground by labour or enrich it with manure if its virtues are abstracted by weeds. Thousands of acres of land in Britain have been rendered unprofitable through nothing else but growing weeds, and if all soil of good staple, so neglected, were well worked, fortified, and kept clean, the produce would be doubled, and landlords, tenants, and labourers benefited. If anyone should be

inclined to dispute the proposition let him declare the grounds of his dissension, and somebody or other will probably endeavour to ascertain whether they are well founded or not. I venture to say those Belgian cultivators who work the land so well do not grow weeds. But if they are expert diggers they are a generation or two behind in ploughing. The implements are rude and animal power weak. The ploughs are dumpy and short-breasted, with one shaft nearly straight up and a cross piece sticking out of one side of it near the top, which the ploughman or woman takes hold of with one hand and drives the gaunt bullock or lean pony with the other; and as for harrowing, it is sometimes done by two men, while in one instance I saw a combination team—a woman, boy, and dog yoked to an implement and trailing it over the land.

A laborious life these Belgian peasants lead, and what their homes must be is not a pleasant thought to dwell on. Domestic comforts must be few according to our notions, but perhaps not to theirs. Let us hope the people are happy. In the London market gardens some of the hard-working Irish labourers think it a bad arrangement having to live in houses that want so much "claning," and have to pay 4s. or 5s. a week for doing it, instead of having shanties on the land and little or no "rint" to pay, and little or no scrubbing to do. Of course there is not a tinge of reproach in this, but it simply shows the force of habit; and as a balancing of national prejudices or preferences a Scotch and an English case may be cited. A Scottish nobleman had bedrooms built over some of his one-storey cottages. A few months after they were finished he took some friends to see how comfortable he had made his people, but was surprised and annoyed by finding the new rooms filled with Potatoes, wood, and general lumber. Protest was useless, as the occupants were firm in the conviction that they could not go upstairs to sleep. Not long ago an English gardener entered on a charge. He describes the place as a very good one, but his family are not comfortable because the cottage is so constructed that they have to go downstairs to bed. Thus do ideals of happiness differ, and it is easy to waste sympathy over persons because they are not as you wish them to be, while at the same time they may be as honest, as happy as yourself. We will hope this is so with the plodding Belgian peasantry. We leave them for the present, and arrive at Ghent, and jump into a cab. "Hotel de la Poste!" brings a responsive, "Jah, Mynheer!" and we rattle away over the stones, for there is no mistaking their presence in the streets of the Flemish city. A footsore carpet trotter described them as the hardest stones in the world, and all placed wrong side upwards —A Juror.

LATE-BEARING MUSHROOM BEDS.

I send some Mushrooms for your inspection, gathered from a bed which was made up in a cool shed and spawned early this year. We have been gathering fair quantities of Mushrooms for several weeks, and the bed is yet in good bearing. The bed is 8 feet long, 3 feet wide, and 1 foot deep, and 4 feet from the floor of the shed. The manure heated violently at first and then went quite cold after the spawn had been inserted. The bed was spawned when the temperature was about 75° and on the decline, but in two or three days after the heat had fallen very low. We were unable to prepare the manure in a proper manner owing to the frosty weather prevailing during the time it was in the open shed. It appeared to be in good condition when the bed was made up, but soon after the frost went, and the weather became mild, which caused the material to heat so violently. In future we shall not make up a bed during a frost if we can avoid doing so. If the manure had remained in the open shed and been turned over once or twice after the frost had gone, I think the heat in the bed would have been more steady and lasting, and not so much time lost. Instead of pulling the bed in pieces after the heat had declined we placed some long litter on it, and added a few barrowfuls of manure, which caused a gentle heat in the bed which lasted for several weeks, when all the material went cold again. My object was to get the spawn to run. The temporary manure was then removed and the bed covered with dry litter. About a month ago Mushrooms made their appearance, and the spawn shows no signs of exhaustion yet.—G. Garner, *Amberwood Gardens, Hants.*

[The Mushrooms are very fresh and firm, also beautifully clean through each being wrapped in a piece of slightly damp tissue paper. Not a few are cut too old, and are the reverse of tempting after a long journey through want of care in packing.]

THE CULTURE OF THE PEACH AND NECTARINE UNDER GLASS.

[A paper read by Mr. Atkins, gardener to J. Kaye, Esq., J.P., Clayton, West Yorks, before the Wakefield Paxton Society.]

It is my intention in this paper to touch as briefly as possible upon the main points on the cultivation of these fruits under glass. There is no doubt whatever that good Peaches can be grown on open walls, but not without considerable expense, and when we have done all for them we can they are uncertain, and will not compare with fruit from trees under glass. It would be unwise to waste time in giving every detail of a suitable structure for the culture of this fruit. Suffice it to say that preference should be given to large houses, as they are easier to manage. In fact it becomes necessary where early forcing is carried on, being less liable to extremes of temperature than small houses or narrow cases. Extremes of heat at any season are dangerous and must be strictly avoided.

The successful cultivation of these fruits greatly depends upon a good border. A suitable soil, for the Peach, like most other fruits, is one of a strong holding character. The borders must be kept firm at all times, especially near the roots of the trees. This will induce the trees to form a large mass of fibrous roots, and it is very desirable to keep these roots near the warm surface. The soil in the border should vary in depth from 2 to 3 feet, according to the bottom on which it rests. Gravelly or dry bottoms require the deepest borders. In the majority of cases one-third of suitable soil may be added to the natural soil of the site, and the whole trenched to the required depth, at the same time adding any other ingredients to enrich or keep it open, as may be thought necessary. Two things must be avoided, the one of using rank manures to enrich the soil—for these induce growth in young trees not easily ripened—and the other of making it too open. Should there be any fear of the border becoming saturated at the bottom with stagnant water, drainage must be provided to carry it away, but in most cases no further preparation in the shape of drainage is required than that which constitutes the remaining part of the garden. But as often suggested, laying cross and main drains, and from 6 to 9 inches of other materials, and form the border of light soil, is the first step to disappointment and failure. More trees suffer through want of water than from the other extreme, especially where confined to inside borders. Apart from that, one of the greatest objections to owners of private establishments, especially near large towns, is the costly outlay in forming borders.

Another important item is the selection of trees. Failures and disapointments frequently arise from the hard treatment trees have received during their nursery career, premature decay of some of the main branches being brought about by the severe cutting back annually to keep them within saleable size; and after all, the majority of specimens have all their strength in the centre, and are more adapted for horizontal training than the free and open fan, the most suitable to this class of fruit. Trees of this description are dear at a gift, and should be avoided. Last season I lost the limb of a Grosse Mignonne tree that had been planted about seven years, through the above treatment; this is very discouraging, and results in a disfigured tree in the future. I do not wish to underrate the work done by our nurserymen, in fact we are much indebted to some of them of late years, but seeing that we are expected to give an ample return from our fruit houses, and are held responsible for any failures that may occur in future, it is well to be on our guard.

I would strongly advise all who have to keep houses stocked with fruitful trees to have young trees in training, so that blanks can be filled up quickly. We cannot spare wall space for these, but the system followed by one of my late masters, who was an able and successful fruit grower, was to plant a line of trees on a border with a good aspect, and form a temporary trellis for each tree, with three strong stakes, one in the centre and one on each side, the side stakes to meet the centre one at the top, and driven in the ground at an angle of about 45°. If trees are intended for front trellises and upright for walls, a few maiden trees untrained that have made a season's growth from the bud or graft should be purchased and planted early in November and cut down the following February to within a foot of the ground, encouraging two shoots right and left to grow unchecked the first season, all the main branches in future to be taken from these shoots. Nothing is easier to train than the Peach if taken in hand at the commencement. My object with a young tree from this stage is to cover the space allotted to it as quickly as possible, and with a little forethought and care in disbudding and pinching, and laying in suitable wood, but little pruning is necessary until after the trees have clothed the trellis, looking well to the lower branches; then an evenly balanced and well formed tree will be the result that will in future furnish the bottom of the trellis equal to the top.

Since I have had the management on my own responsibility I carry out the old system of summer-pruning established trees. This consists in removing all useless and exhausted wood as soon as the crop is gathered. I am aware this system is not generally adopted, but why, I do not know. In my estimation it is one of the main points connected with the culture of this fruit, especially in these late and sunless districts. This naturally strengthens and encourages the proper ripening of the wood left. At the same time we shorten some of the branches to a healthy and younger

branch where necessary to insure a generally even growth. We have not only to prune for the present, but for the future, and by cutting back a few of these branches we induce the formation of young growth much nearer the stem that will furnish a supply of shoots to cover naked places and keep up a supply of bearing wood over the whole surface of the tree. If this is carried out when the trees are in full foliage a better judgment can be formed of the quantity of wood required to cover the trellis. Crowding in unnecessary wood that cannot get well ripened is one of the greatest evils connected with this fruit. From 4 to 6 inches is a rule with me, and at the winter's pruning I prefer to shorten these according to their strength, varying from 6 to 18 inches. In the majority of cases we only take one fruit from a shoot, and two at the most, sufficient fruit buds remaining to select from, and by shortening or reducing the number, those remaining are stronger in consequence, remembering the stronger the bloom and the more perfect set we obtain the finer will be the fruit; and further, it induces the shoots to break stronger at the base to give us a shoot to fruit the following season.

The trees should be taken down and tied in bundles, and the house thoroughly washed in every part with soap and water, and the trees thoroughly syringed with a mixture of soap, petroleum, and water I never use, nor would I recommend, any of the mixtures used by some to paint their trees. This is waste of time, and in many cases the insects are only covered for the winter, coming out as soon as the trees start in spring and puncture the young leaves. The trees are returned to their proper places, the surface of the border being cleaned and pointed up with a fork, then given a light covering of fresh loam.

The house is ready for starting any time after the 1st of December, according to the time fruit is required. My earliest house is started on the 1st of January, and brought on gradually, applying fire heat about the middle of the month. Trees that are accustomed to start at this season are easily excited and will soon be on the move. The cultivator must keep one object in view, and that is, to bring out a strong healthy bloom whilst the wood buds make but little progress until setting is nearly completed. This is of far more importance than many imagine, but those who pay strict attention to trees at this stage obtain the best results. One of the greatest errors frequently committed during the earliest stages is exciting the wood buds at the expense of the flowers by a high temperature and an excess of moisture. The house should be started with a temperature of 45° at night, dull days 55°, and 60° with sun heat, a free circulation of air day and night at all seasons, avoiding cold draughts, especially when the trees are in bloom. I never use the evaporating troughs, nor do I practise syringing the trees, except on bright days, until after the crop is set and the petals falling freely; if the house is kept moist in every part it is sufficient during the earliest stages. When the flowers begin to open the temperature should rise 5° more all round, but no hard-and-fast rule can be laid down, we must be guided by the external atmosphere, as during a spell of mild weather and an atmosphere loaded with moisture a few degrees more are necessary to bring the pollen into a fit state for fertilisation, or, on the contrary, when hard firing is necessary during severe weather such as prevailed this spring from the 7th of February until far into April, with the thermometer outside standing at 30° during the day, with from 4° to 6° of frost at night, and very few hours' sunshine. Five degrees less during the day, and 10° at night, will give better results under such circumstances. A rather drier atmosphere should be maintained during this period, but avoid carrying it too far. The house should be damped on the afternoons of fine days, and I prefer to go over the trees on alternate days at noon with a camel-hair brush. With this aid I have never found any difficulty in obtaining an even set on such varieties as Barrington, Walburton Admirable, Noblesse, and Princess of Wales with the pollen carried from the smaller flowered varieties. After the fruit is set and swelling suitable temperatures are 55° at night, 65° on dull days, and 75° from sun heat. These figures must not be exceeded until stoning is completed.

Thinning the fruit must commence as soon as they can be pronounced safe, or before they reach the size of peas, and with a liberal hand at this stage, followed up at intervals as the fruit advances. When they attain the size of Hazel nuts the fruit will swell rapidly until the stones begin to harden, and the healthiest trees will feel the strain of any excess of fruit left on them. I like to leave 20 per cent. to be thinned finally after stoning is completed. If trees are allowed to be shaded with shelves used for Strawberries, Beans, &c., they are liable to cast their fruit at this period. As a rule trees do not shed their fruit under proper management. If they do this to any extent it is due to overcropping, either in the current or preceding season. My rule is, a Peach to each square foot. This is a good annual crop, and one fine fleshy Peach will give better satisfaction than three ill-flavoured small fruits, and we invariably find the stone as large in a small fruit as in a large one, hence the difference is made up in flesh.

Disbudding must be followed at intervals with care and judgment from an early stage, taking care not to give old or weakly trees a check by operating too early or removing too many shoots at one time, pinching those with fruit at their base or where spurs are required on permanent wood. A free and steady growth should be encouraged until the stoning period is past. After this time the trees will make rapid growth, and the future work of the season will consist of tying in sufficient suitable wood and stopping terminal growths if not required to extend when they have grown 8 inches or a foot. The syringe may be used freely every afternoon when the air is reduced to keep the trees free from insects. The maintenance of a moist atmosphere, a steady temperature from 60° at night, with a rise to 80° from sun heat, with plenty of air in the daytime, and the usual chinks left top and bottom on at night, will encourage a free and short-jointed growth.

When the fruit shows signs of ripening syringing must be discontinued, but the stems and surface of the border may be kept moist until on the point of finish, when a comparatively cool temperature, with abundance of air, is necessary to assist the perfect ripening of the fruit. Peaches or Nectarines must not be allowed to fall nor be gathered before they are ripe. Trees should be examined daily, and twice during hot weather, morning and evening, but morning should be preferred when the fruit is fresh and cool; nets may be put up to catch any that may fall, otherwise the fruits would be useless.

Careful root watering must be attended to. Peaches must never be allowed to feel the want of water at any time. Duties press hard on all sides and at all seasons; but our fruit trees under glass, after we have secured the crop, must not be neglected. The surface of the border, where hard, should be pointed up with a fork and receive a thorough soaking of water. Diluted liquid or any other artificial manure should be given to old or weak trees that have felt the strain of a crop. Root-action is brisk at this season, and any lack of food or moisture will lead to bud-dropping. Although this arises from immature wood through the roots having wandered away in unsuitable soil, rich borders, and over-cropping, still in the majority of cases it can be traced to dryness. Borders should be frequently examined and kept moist.

Trees should receive a good watering six weeks before they are started, and the final watering must be given a month at least before the fruit is ripe. Water given after this time might cause the fruit to fall. A certain amount of vigour in the trees must be kept up by applications of stable liquid, or Beeson's manure as a top-dressing, or mixed with water and applied during active growth. Whilst I am recommending stimulants to assist the trees in perfecting their crop of fruit, I would at the same time urge the cultivator to guard against overfeeding, as stone-splitting and bud-dropping, and in numberless instances barrenness, is the result of over-feeding. This tendency to cause an over-exuberant growth, especially in late districts, not favoured by sunshine, must be avoided.

Last but not least is root lifting, this being the keynote to all success. No work pays the fruit grower better than this when carefully carried out at the proper time—*i.e.*, when trees have or should have completed their growth, and before the leaves fall. I have been accustomed to lift some portion of our trees every autumn. I have one tree of that well-known but shy-bearing variety Walburton Admirable, which owing to the limited space of trellis, has been subjected to this treatment every alternate season for the past six years, and has never failed to finish a crop of fine fruit. Trees that have a disposition to rush off into growth as soon as the sap rises in spring, and continue to make strong sappy growth late in the autumn, are the kinds to be dealt with, shortening all strong roots and placing them in firm soil, free from manure, in a horizontal position near the surface, which they should never leave. This operation increases the number of feeding or fibrous roots and brings them within reach of food and warmth. In fact, trees that occupy limited spaces of trellis cannot be kept in a healthy fruitful condition for any length of time where root-lifting is neglected. Trees thus treated make clean and healthy wood, and are rendered less liable to become a prey to insects and diseases so prevalent amongst these fruit trees. With plenty of fibrous roots and good feeding when necessary annual crops of fine fruit will be the result. But it is useless to feed where there are no roots, or rather where they are out of the reach of food given to them, and the more we seek to make ourselves thoroughly acquainted with the condition and requirements of our trees the more successful we shall be.

ORCHIDS

DENDROBIUM DENSIFLORUM.

NOBLE specimens of this beautiful Orchid have frequently been seen at our leading exhibitions, and occasionally we find as fine specimens hidden away, as it were, in some of our old-fashioned gardens, where exhibition honours are never sought after or much thought of either. But rarely do we find in the average garden of to-day plants of this lovely Dendrobe worthy the name; when we do, however, the fact is worth chronicling.

Mr. Pinniugton, the gardener at Blacklow House, Roby, Liverpool, has grown a very creditable plant, and flowers it well annually. Many larger plants have been grown, but I am sure our readers will agree that sixty-two flower spikes, with an aggregate of upwards of 1500 blooms on a plant in a 10-inch pot, is something not to be ashamed of; the plant produced the above last season, and made more than 100 new bulbs. The only drawback to the variety densiflorum is its short duration in bloom—at the end of one short week after expanding its glory has departed. It is hard to pass many other things in this establishment without a notice. Daphne indica, 4 feet through, covered, as we seldom see it, with foliage, dense from top to base; a picture, when laden with its rich and fragrant flowers, more easily imagined than described. Tecoma jasminoides, on roof of conservatory, is also fine, with capital Camellias underneath; and in an adjoining house grand specimen Ferns that come in for special favours. Again, adjoining is a fernery containing a rare Fern mentioned in the Journal about a year ago—Angiopteris evecta, which is deserving of a little consideration in the matter of raising the roof to afford it necessary head-room. Bougainvillea glabra, probably about thirty years of age, has a trunk that gives it the appearance of being an artificial prop to the house, affords an enviable wealth of bloom in this house.

Mr. Pinnington is not unknown as a fruit exhibitor at Liverpool, and a successful one also, particularly so in hardy fruit, a fact to be proud of under circumstances the reverse of favourable.—L. B. T.

MR. SMEE'S CATTLEYAS.

THE Hackbridge collection of Cattleya Mossiæ varieties is very choice, and the display is heightened in effect by the abundant foil of Ferns in the interesting house in which the Orchids are flowering. The following descriptions by Mr. Lewis Castle accurately represent the varieties, and these, with many others unnamed, but excellent, combine in producing a beautiful effect.

Cattleya Mossiæ Mrs. Smee.—Sepals and petals suffused with rosy mauve; petals 4 inches long by 3½ inches broad, slightly but evenly undulated towards the apex, gracefully curved or drooping. Lip open, 3 inches from the throat to the apical margin, 2½ inches in diameter, beautifully frilled and crisped, the base of the lip rich gold, running up to the side margins, intense magenta in the centre and veined with crimson in the throat. A very handsome variety. Two years ago this plant bore five pairs of flowers; last year it had sixteen blooms, and it now has ten spikes with twenty-six fine expanded blooms.

Cattleya Mossiæ Southgatei.—Sepals spreading, and petals slightly drooping, undulated, purplish mauve, splashed and streaked with a darker tint. Lip oblong, beautifully frilled, golden bronze in the throat, dark crimson centre and veining, light blush margin. An effective variety.

Cattleya Mossiæ Percivaliana.—Sepals and petals narrow, recurving, slightly undulated towards the apex. Lip narrow, but of rich colour, the centre crimson purple, with a fine white margin, broader at the apex; lateral lobes and throat veined with golden bronze on an orange ground, the base marked with crimson. There is very slight frilling, but the variety is a peculiarly beautiful one.

Cattleya Mossiæ, Cummins' variety.—Distinct and pretty, the flower of good shape, with broad light mauve petals. The lip well proportioned, sharply cut into a fringe at the edge, but not so deep as most others; the margin is pale, with a rich crimson centre, running into the orange veins of the throat, and giving a peculiarly rich coppery hue.

Cattleya Mossiæ Lawrenceana.—A small flower with blush sepals and petals. Lip with a solid crimson purple centre, bronze-gold veining in the throat, and a narrow white even margin.

C. Schröderi, C. Wagneri, with several forms of C. Mendelli are also flowering, one of them being very distinct and beautiful.

CYPRIPEDIUM BELLATULUM.

MESSRS. H. LOW & Co., Clapton, have been fortunate enough to introduce a superbly beautiful Cypripedium which may be popularly described as the finest variety of C. Godefroyæ, though there is more justification for ranking it as a distinct species than there is for some that have been so distinguished. The flowers on the plant shown at Westminster last week, when the Royal Horticultural Society awarded it a first-class certificate, had partly expanded upon the plant in the case as imported, and would therefore not be expected to be full sized: they were, however, 2½ to 3 inches in diameter, and dried flowers have been obtained 4 inches across.

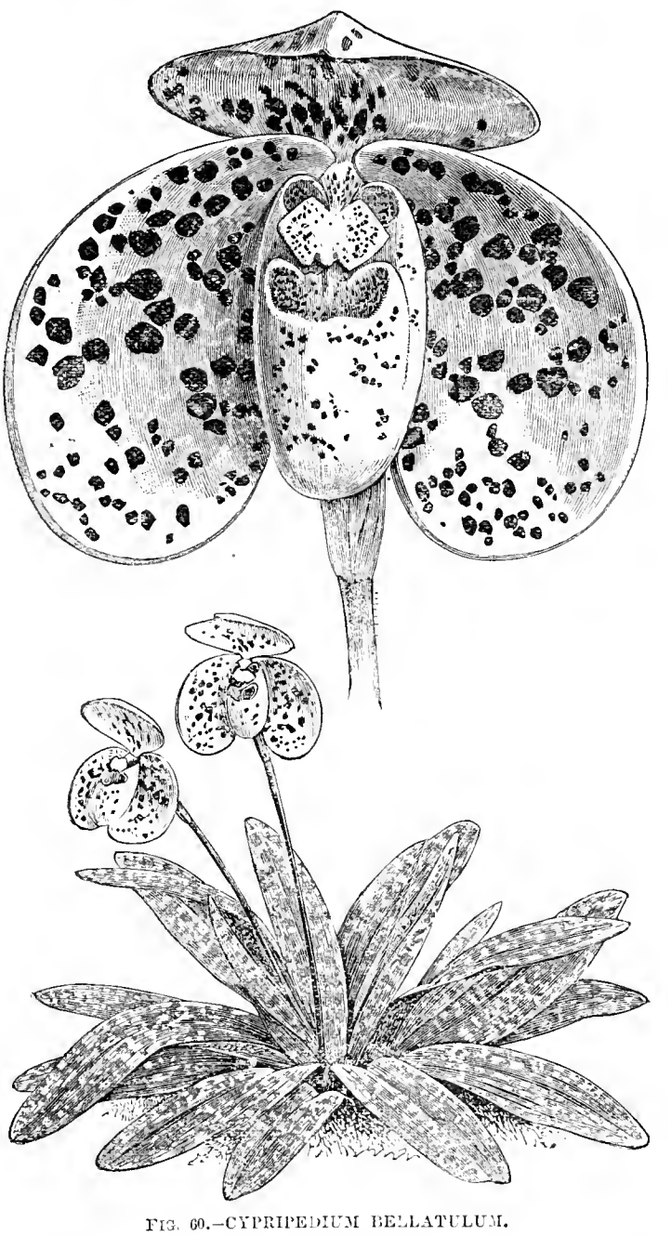


FIG. 60.—CYPRIPEDIUM BELLATULUM.

The dorsal sepal and the petals are broad and well formed, creamy white with deep crimson maroon spots clearly defined, the lip having a few smaller dots. It appears to be free in growth and flowering, and we have seen several imported plants already showing flowers.

WOODHATCH LODGE, REIGATE.

SOME good spirit prompted Mr. T. B. Haywood to invite a party of the "Councillors" and Fellows of the Royal Horticultural Society to inspect his garden at Reigate last Thursday, and as the weather proved exceptionally favourable, it can be imagined that with such an admirable host and hostess as Mr. and Mrs. Haywood the guests most heartily enjoyed their visit, and departed reluctantly. The garden at Woodhatch Lodge is widely famed for its Roses, but Orchids are also a specialty, hardy plants are prized, and everything that is undertaken shows the same good results as the Roses. Every department found its admirers amongst the visitors. Mr. Harry J. Veitch, Mr. H. M. Pollett, and Mr. Dominy examined the Orchids with the keenest interest. Mr.

George Paul inspected the extensive collection of Roses as such an enthusiast might be expected to do. The Rev. W. Wilks discoursed upon hardy plants, and Mr. Pearson investigated the structure, heating, and ventilating of the glass houses as an expert; while a nameless individual had a full share of the enjoyment, and will endeavour to briefly chronicle something of what was seen during the afternoon.

Woodhatch Lodge is situated on a considerable elevation above and to the south of the town of Reigate, commanding some delightful views towards the Sussex Weald, and rejoicing in an atmosphere of exceptional purity. The garden itself comprises about 10 acres, but the major portion of the estate constitutes the Home Farm, which, with his choice breeds of cattle, receives much of Mr. Haywood's attention. Around the house the grounds are tastefully but unpretentiously laid out, winding walks, vigorous and varied shrubberies, and abundant trees constituting what may be termed the framework; beds and borders of hardy plants, and Roses by thousands in grand condition, filling up the picture. Some of the Roses are grown at the upper part of the garden near the houses, but the principal Rose garden is situated lower down, near the farm, and there are numberless beds of dwarf H.P. Roses cut hard back with Teas pegged down, all looking as promising as could be wished, and the Woodhatch record of exhibition victories, remarkable as it is, it may be hoped, is by no means completed.

The glass houses are, however, extensive, and we must direct a few minutes to them, for respecting the Roses something will probably be said later on. The first range entered is approached by a lean-to house 36 feet long, with lobby or porch entrance and double doors—a wise provision to avoid draughts in winter. At this time of year the porch, like the other part of the house, is filled with Odontoglossums, comprising wonderfully strong plants and several fine varieties of O. crispum. The plants are in excellent health, and have quite a forest of spikes either expanded or advancing, and the plants have afforded a succession of flowers since Christmas. O. crispum, O. Pescatorei, O. Halli, O. Andersonianum, O. sceptrum, O. vexillarium, including a good plant of the variety rubellum, O. Rossi majus, O. Cervantesi, and O. cirrhosum contribute to the effect. O. vexillarium is grown in slightly warmer quarters, but O. cirrhosum does well in the house, the temperature of which is not allowed to fall below 50° in winter, and it is kept as cool as possible now. Arranged with these Masdevallias have an extremely fine appearance, the contrast of their brilliantly coloured flowers with the delicacy of the Odontoglossums being very striking. M. Veitchi is represented by several fine specimens; one has had fifty flowers and a fine variety has nineteen large flowers; M. ignea, Paterson's variety, has fifty flowers, and several good varieties of M. Lindeni are grown with forty to sixty flowers each. Prominent at the end of the house is a specimen of Dendrobium thyrsiflorum, having twenty-two long racemes of white and golden-lipped flowers; but this is only one of many fine plants of this useful species which is made a specialty at Woodhatch Lodge, and to which we must refer presently.

At right angles to the Odontoglossum house is a lean-to range, 90 feet long, facing the south, the opposite side of the back wall being devoted to a range of lean-to houses for cool Orchids. It may be here remarked that throughout a capital material is employed for covering the stages—namely, a fine clean grit obtained from Eastbourne, which serves all the purposes of retaining moisture, and has a better appearance than small coal or coke. Beneath the stages are moveable zinc tanks filled with water, intervening spaces being planted with Selaginella. The first division of the long range is filled with Aerides, Vandas, Cypripediums, and a few other choice plants, such as Dendrobium nobile Sanderianum, a handsome variety of the nobilius type; the valuable hybrid, Cattleya calummata; then amongst Cypripediums are the choice hybrids, leucorrhodum, Morganiæ, and candibulum, with the recent introduction C. bellatulum, now showing flowers. Saccolabiums ampullaceum, præmorsum, and curvifolium, the latter with two spikes of bright red flowers, are included in this house.

The Dendrobiums have the next division of the range, and there are the plants of D. thyrsiflorum already mentioned. Over twenty large bush-like specimens are grown, and these have had a total of 209 racemes out at once, the majority of them being still in fine condition at the time of our visit. The plants are remarkably strong, with stout growths 3 feet or more in length, bearing more and larger leaves than are usually seen. The gardener, Mr. Ridout, has been very successful with these as with other plants, and it may be useful to briefly record his practice. The minimum winter temperature is 60°, with 70° to 75° in the summer, and full exposure to sun in the autumn to ripen the growth. During the winter the plants are never allowed to become very dry, as the object is to preserve the foliage as much as possible, and this, with a thorough maturation of the growth, Mr. Ridout considers essential to success. The plants are potted in peat and sphagnum, and started into growth immediately after flowering, a little weak liquid manure being beneficial, but when the plants are well established, as some are in 10 or 12-inch pots, they do not require repotting every year, some of the finest in the collection not having been so treated for two years. Some of the largest spikes, including those of the variety Walkerianum, exceed a foot in length, and altogether these Dendrobiums are most satisfactory examples of good culture. In the same house a fine variety of D. Dalhousieanum has nine racemes; D. chrysotoxum, fourteen racemes in a 24-size pot; D. Wardianum, D. Jenkinsi, and D. suavissimum are equally at home. The Cattleya house contains a number of fine Lælias and Cattleyas, with Vanda cœrulea, 242 flowers of the two former having been open at once, all good varieties. The houses at the north side of the range are filled with Phalænopses, Odontoglossum vexillarium, grown in a temperature ranging from 55° to 75°; Odontoglossum with Masdevallia in other divisions. Masdevallia tovarensis is a favourite, two dozen large plants being grown which have had from twenty to fifty spikes each. The old spikes are always allowed to remain on the plants, and it has been found that while young ones only bear two flowers each, the older ones have four and five each. Beautiful varieties of M. Harryana are grown, including the celebrated Bull's Blood, which has thirty flowers, a fine form of the hybrid M. Chelsoni, and innumerable others.

The plants under glass are not all Orchids, Ericas and hardwooded plants receive some attention, together with ordinary stove flowering and foliage plants, the majority of the latter being grown in a long range of houses, comprising four span-roof structures at right angles with the lean to's and corridors which connect them. Covering the back wall of a stove in this range is a grand old Combretum purpureum which has been there for about twenty years, and annually bears a profusion of its flowers. In the same range Peaches and Vines have houses devoted to them, Cucumbers, Melons, and Tomatoes having pits elsewhere. The kitchen garden is in excellent condition and well furnished with healthy fruit trees, the different quarters being surrounded by horizontally trained trees. Chrysanthemums are a feature, and 600 or 700 of the best varieties are grown. Dahlias constitute another specialty, and prizes for these with Asters, Grapes, Peaches, Apples, and Strawberries have been repeatedly taken for produce from this garden. Woodhatch Lodge is, in fact, what is termed in gardening language "a good all-round place," and that was the unanimous verdict of the "Royal" visitors. A wish was also expressed that so pleasant an excursion might be repeated at some future date, and that wish is cordially endorsed by—THE RECORDER.

ARTIFICIAL MANURES.

BEFORE resuming the discussion on the above subject I would draw attention to the object I had in view in taking a retrospect in my previous article; it was to keep before your correspondent the points on which I took the liberty of differing from him, and as no controversy can come to a satisfactory issue unless the original views and the opposition to them are not kept well to the fore, I would again call his attention to a few facts in the previous articles. In the first place I took exception to the advice of applying nitrate of soda alone as a manure on account of its too evanescent and sometimes apparent ill effect on the soil, recommending it to be combined with some of the more substantial manures.

This point Mr. Dunkin has finally settled in my favour in his somewhat ingenious treatment of the question I asked in a previous article, "Does the constitution of a plant improve because its bulk is increasing?" The answer is, Yes. But he makes haste to add a prop to this bold assertion—viz., provided the plant has within its reach a sufficiency of the principal solidifying agent. Exactly so, but supposing the plant had not a sufficient supply within reach, what then? I leave the answer to Mr. Dunkin's careful consideration. Why he should consider this the rock on which my argument splits I am at a loss to understand, as I maintain that the theory of the application of the stimulating combined with the solidifying agents, a rock on which the whole practice of successful fertilisation will rest securely, and on these lines I have endeavoured to maintain my argument throughout the discussion. Or does he infer that my arguments have come to grief through my not taking into consideration the various stages of growth that the plants are in at the time the manures are applied? Now, if Mr. Dunkin had kept his memory refreshed with an occasional reference to what has been written in previous articles he would not have fallen into this error.

Again, your correspondent metaphorically cut the ground from under his feet when after advising one kind of manure for some time to change to another as a course especially beneficial to plant life, and which I pointed out was theoretically and practically unnecessary provided the manure used in the first instance was a properly proportioned combination of the elements needed for the plant's support. He now advances as the results of the latest scientific investigation that the true system of manuring is to supply to the soil phosphoric acid and potash, regulating the amount of growth by the supply of nitrogen. Evidently Mr. Dunkin is making rapid strides in the science of chemistry, as heretofore the haphazard change from one manure to another was deemed sufficient, but now he has apparently been brought to see the untenable nature of these views, thus his conversion to the "true system." If your correspondent had not unfortunately been in previous opposition he would have made a valuable alliance through his being in possession of the results before mentioned, and which I presume have come to hand since the commencement of this controversy. To reduce the theory of the "true system" to practice and to use practical terms, I must point out that the soluble nitrogen, phosphoric acid, and potash are merely old friends under new names, nitrate of soda being a valuable source of soluble nitrogen, superphosphate of lime that of phosphoric acid, and kainit of potash. Thus we see that by a skilful combination of these substances we are enabled to supply a plant with its means of support as derived from the soil. Of course, discretion must be used in regard to the quantity applied to a special subject, as none but the merest tyro would ever administer the same quantity to a seedling as to a full grown plant, or, again, to one in this stage to another maturing a heavy crop of fruit or flowers; and the mode of administering liquid manure as mentioned by your correspondent is only a simple illustration of what I should call common-sense practice.

While on the subject of liquid manure I would like to add a word or two on the case mentioned by "B." on page 384 in regard to the Chrysanthemums which he inferred had been fed with liquid manure until they were so surfeited with it as to be actually starving in the midst of plenty. I should from the fact of their quick recovery on the application of artificial manure be rather dubious in accepting the cause as set forth by "B," though as regards the theory it may on first sight look feasible enough, and the solution read very well to anyone holding peculiar views; but as the evidence is inconclusive it cannot be taken as a very striking example of applied science, the palpable weak point being in regard to the strength of the liquid manure, and the flushing of the soil with clear water loses weight as an operation, absolutely necessary on account of all being done alike. If only one-third had been thus treated another third had artificial manure applied without the flushing, and the remainder had their usual dose of liquid manure supplemented with artificial the results would have been conclusive as to the cause of starvation; as it is they are not. What makes me inclined to doubt the "starvation in the midst of plenty" theory is a case that occurred under my charge in much the same way, Chrysanthemums being also the subject. These, according to our usual practice, were potted in fresh chopped turfy loam without any of the usually considered indispensable admixtures, and from the commencement they were watered with liquid manure; a vigorous growth ensued, and as they were in a fully exposed position to get all the benefit from the sun the growth was of a fine solid nature. This continued up to about the middle of August, when they showed signs of starving. This I attributed to the disproportion of the spread of foliage to the limited root run; consequently I reasoned that as the soil at the command of the plant was ramified in all directions with its roots, any nutriment brought into the pot by the liquid manure was quickly assimilated, and no accumulation of a store was possible. I therefore supplemented the liquid manure with frequent surface dressings of artificial, and the renewed vigour that followed was astonishing, and the crop of flowers that followed gave satisfaction to all concerned.

The subject of water in conjunction with manuring is treated in a masterly style by "B.," and I cordially endorse what he says in respect to its application, and if its powerful agency in the cultivation of plants was better understood, and duly impressed on young beginners, their progress towards competency in gardening would be greatly accelerated. Given a plant, the best variety, potted into the most suitable of compost, and placed in the finest of modern built structures, but let a non-discerning individual armed with a waterpot come near it, and all the foregoing counts for absolutely nothing.

Turning, again, to Mr. Dunkin's article on page 408, in reference to the question, "Does nitrate of soda leave the soil in an exhausted state?" Can he not see that the quotation he gives directly supports what I advised at the commencement, that it should not be used alone, but combined with some other more substantial plant foods? and in the quotation referred to reasons are given why such a course is beneficial, though the figures, as they appear, are open to criticism, but as they are presumably given with merely the object of illustrating a great point in the science of artificial manuring I will not touch thereon. Nitrate of soda is there shown as an active agent that stimulates the plant and enables it to take up nourishing materials lying around, and thus arises the notion that nitrate impoverishes the soil, which it undoubtedly does, or rather causes the plant to do so, therefore the true science of manuring is absolutely indispensable to successfully transfer mineral substances into field produce; but, as I mentioned previously, if the phosphoric acid and potash should unfortunately not be present—say, for instance, repeated applications of nitrate had caused the absorption of all the elements—would not the nitrate soon come into disrepute with the unscientific user, as it has done in many instances when used alone? but if applied as "B." recommends sulphate of ammonia and superphosphate to be, we should soon cease to hear so much of these objections.

If instead of indulging in unfounded charges of inconsistency and misrepresentation in reference to the arguments I have brought to bear against the change of food system, and also on the need of an elementary knowledge of chemistry as essential to every cultivator, Mr. Dunkin had applied himself to scientific research somewhat earlier in the debate, he would not have placed himself in the anomalous position he now holds. For instance, if he had looked into the case of applying the different manurial agents to a pasture he would have found plenty of scope for criticism if he had not beforehand depreciated a slight knowledge of chemistry, relying rather on the experience he holds so dear. There we see experimental trials made with various substances to see what effect they would have on vegetation, both the experience your correspondent holds in so much esteem, and also the rudimentary knowledge of chemistry, on which he considers I place a too high value on, was conspicuous by their absence, and possibly if careful reflection and reasoning had not been followed the conclusion arrived at would have been grossly erroneous. Had chemical knowledge been brought to bear on the experiments the nitrate of soda, superphosphate, and muriate of potash would have been combined together for obvious reasons. Provided Mr. Dunkin had a supply of artificial manure of this description on hand, would he consider a recourse to the "change" fad beneficial? I venture to think not, as by his own showing he would have a perfect plant food, which idea he previously opposed as impossible, containing the essentials necessary for a plant's support—viz., soluble nitrogen, phosphoric acid, and potash, and if he had the ingredients separately he could combine and administer them to the plant in such quantities and proportions as, after considering the nature of the plant and its state of growth, his judgment tells him is necessary.—M. COOMBE, *Ashton Court, Bristol.*

Notes & Gleanings

EVENTS OF THE WEEK.—Messrs. Protheroe & Morris announce a sale of Orchids at their rooms in Cheapside, on Friday next, June 1st; and on Tuesday, June 5th, the first portion of the choice collection of Orchids formed by Dr. Duke at The Glen, Lewisham, of which several accounts have appeared in the Journal, will be disposed of at the same rooms. On Wednesday, June 6th, the Covent Garden Fête in connection with the Gardeners' Orphan Fund, will be held in the Flower Market, from 9 to 12 P.M. On the same day the Bath and West of England Society's Show at Newport (Monmouth) will be opened and continue until June 11th. At this Show a cup, or money, value £10, will be given for the best group of Orchids, and two classes are provided for Roses, for amateurs and nurserymen respectively, the prize in each case being a cup or £5, for eighteen varieties (single blooms) of Tea and Noisette Roses.

—— THE WEATHER.—Our Perthshire correspondent writes:—"The week ending May 28th has been throughout one of brilliant sunshine with the exception of Sunday. In the afternoons and evenings cold easterly winds have prevailed." Towards the close of last week bitterly cold winds prevailed in the south, and tender plants put out too soon suffered accordingly.

—— WE learn that SIR ROBERT LODER, BART., died somewhat suddenly on Sunday evening at his marine residence, Beach House, Worthing, from a stroke of paralysis. He had been in indifferent health for some months. The deceased baronet was the only surviving son of the late Mr. Giles Loder, of Wilsford House, Salisbury, and is succeeded in his baronetcy by his eldest son, the present High Sheriff of Northamptonshire, Mr. Edmund Giles Loder, who is a member of the Council of the Royal Horticultural Society.

—— ORCHIDS IN PARIS.—We are informed that President Carnot's prize, offered for a collection of Orchids at the Paris Exhibition, was awarded to Messrs. F. Sander & Co., St. Albans, for a group including several that were shown in the Temple Gardens recently.

—— MR. H. CANNELL, in sending a magnificent bloom of CEREUS SPECIOSISSIMUS for our inspection, observes:—"The largest plant of Cereus speciosissimus in England was at the seat of Richard Gurney, Esq., Thickthorn Hall, Hethersett, Norfolk, forty years ago. It was planted out in the centre of a lean-to 40 feet house against the wall, and after covering the wall it was allowed to extend round to the front door on the opposite side, and it became so attractive that it was allowed to occupy the whole house, and it was the talk of the nation. It had as many as 300 flowers open in a day. Can anyone say what became of the plant?" There are two varieties of this handsome Cactus, one having much larger flowers and more purple in them than the other. The one sent by Mr. Cannell is the better. We have lately seen some blooms of seedling Cacti raised by Mr. C. M. Major of Croydon. They belong to the section of Phyllocactus, the plants having flat stems. The flowers are large and brilliant in colour, one, a deep crimson scarlet, especially so, and are more or less deeply tinted with purple, suggestive of the beautiful Cereus referred to.

—— MR. T. S. WARE, Tottenham, recently sent us a box of PÆONIES AND OTHER FLOWERS, of which the following are noteworthy:—Pæonies, Souvenir de Madame Knorr, large semi-double, pale crimson, darker at the base, very light at upper part, delicate and pretty; Louise Mouchelet, double, full, rosy crimson, handsome; Lambertiana, pale blush, nearly white, double; Souvenir de Chinoneeaux, purple, semi-double, bold; and Cerenie, deep purple, semi-double, distinct, and rich; and double varieties of Pæonia officinalis; La Négresse, very dark rich crimson; Alba, double white; and Chamois, blush streaked rose and crimson. The double white Narcissus poeticus and the white Pink, Mrs.

Welch, were also included, together with some fine varieties of Cornflowers—crimson, blue, and white.

—— "B. C." writes :—"The extensive ranges of glass at HEATHFIELD, LOW FELL, GATESHEAD, the seat of Theodore Lange, Esq., is well known to the readers of this Journal, containing as they do many rare examples of plant culture, especially Orchids. It was my pleasure to see them the other day, and in the stove were about thirty plants of Cattleya Mossiæ and Mendeli all in flower, the former predominating, the labellums of which are very richly marked. The plants are effectively arranged amongst Ferns, giving them a highly pleasing appearance. The Cattleyas are in small pots and flowering vigorously. I observed a number of Odontoglossum Alexandræ in bloom. Many interesting crosses of Orchids have taken place at Heathfield lately, so the Orchid-loving public may expect something good and distinct under the care of the experimental cultivator, Mr. Methven."

—— THE second annual Summer Show of the ENFIELD HORTICULTURAL SOCIETY is announced to be held in the grounds at Chase Side House on July 4th next, eighty-six classes being provided, and the Autumn Show will take in the Byeullah Athenæum, November 7th and 8th. The result of the two shows held last year is a satisfactory balance of £16 16s. 7d., which is encouraging.

—— UNDER the title of the KENT COUNTY CHRYSANTHEMUM SOCIETY a new Society has been formed in the Lewisham and Blackheath district that is likely to have a prosperous career. The President is F. W. Prior, Esq., Gordon House, Blackheath Park, and amongst the Vice-Presidents are Sir John Lubbock, Bart., the Very Rev. S. Reynolds Hole, Colonel J. T. North, Major H. M. Wood, Harrison Weir, and H. M Pollett. The Committee include Messrs. N. Davis, H. J. Jones, J. H. Laing, T. W. Sanders, and E. Trollope, the Hon. Secretary being Mr. H. A. Needs, 35, Ringstead Road, Catford Bridge, S.E. The schedule of the Show to be held on November 14th and 15th this year in the rink at Blackheath, enumerates fifty-six classes for cut blooms and plants, special prizes being contributed by several of the Society's supporters.

—— GLAZED FLOWER POTS.—"A. L. B." writes :—"I was very much interested in reading the article at page 355 on glazed flower pots. It is surprising what good things are sometimes either ignored, neglected, or not taken advantage of when made visible to the greatest as well as the meanest observers. I remember fifty years ago specimens of Roses, Pelargoniums, &c., being grown in glazed pots, such as old bowls, crocks, and old teapots, even in crystal dishes; nearly every house had its favourite flower, and very often in an old teapot."

—— THE RUGBY AND DISTRICT CHRYSANTHEMUM SOCIETY will hold their second annual Exhibition in the Town Hall, Rugby, on Wednesday and Thursday, November 21st and 22nd, this year, when prizes will be offered in forty-six classes, besides several special classes. The chief class for plants is that for a group arranged in a space of 80 square feet, the prizes being £2 10s., £2, and £1 10s. For cut blooms the principal is for thirty-six, eighteen incurved and eighteen Japanese, the prizes of the same amount as for the groups, but to the winner of the first prize will be presented a silver cream jug and sugar bowl, value £2 10s., given by Mr. W. Bryant, seedsman, 28, North Street, Rugby, who is Secretary to the Society.

—— THE HIGHGATE HORTICULTURAL SOCIETY'S Summer Show will be held at the Priory, Highgate, on July 19th, this year, when in addition to the eighty-eight classes provided by the Society for plants, flowers, fruits, and vegetables, the President, Colonel Stedall, offers eighteen prizes in six classes; the Baroness Burdett-Coutts offers six prizes in six classes, and other friends provide prizes in twenty-five classes, in addition to those contributed by the Baroness Burdett-Coutts for cottage and allotment gardens.

—— THE GARDENERS' ORPHAN FUND.—The usual monthly meeting of the Committee took place at the "Caledonian Hotel," Adelphi, W.C., on the 25th inst., Mr. Geo. Deal presiding. The minutes of the last meeting having been read and signed, a letter was read from the widow of the late Mr. John Woodbridge, acknowledging the letter of condolence and sympathy with her on the death of her husband, who was an active member of the Committee of the Fund. The Hon. Secretary, Mr. A. F. Barron, reported that a sum of £772 16s. 5d. stood to the credit of the Fund at their bankers; that the total sum of donations promised to date was £1195 8s., of which sum £1093 5s. had been received, and subscriptions, £393 12s., of which sum £244 2s. had been paid. Those who have promised subscriptions need to be reminded that the first election takes place on July 13th, and that no one will be entitled to vote whose subscription remains unpaid. Since the last meeting of the Committee the names of twenty-two new donors and subscribers had been received; donations amounting to £26 13s.; and subscriptions 11s. Mr. Smith, of Mentmore Gardens, handed in the sum of £7, the proceeds of a concert given at Mentmore on behalf of the Fund. The sum of £7 16s. was sent in by Mr. W. Howard, of Southgate, collected by him at the Temple Show. Votes of thanks were passed to Messrs. Smith and Howard for their valued services. It was resolved that a further sum of £500 be invested in consols, making £1000 in all. The Sub-Committee appointed to prepare the voting papers for the election on July 13th, reported the completion of the same, which was cordially approved. A letter was read from the nominators of Albert Edward Best, the youngest of a family of four children, stating that since his nomination the mother also had died, and that he is destitute. The Hon. Secretary laid upon the table a list of subscribers of the Fund to date, and persons desirous of obtaining a copy for the purposes of the election can have it by applying to Mr. A. F. Barron. A form of invitation to dinner on the evening of the day of the election to be sent out with the voting paper was approved. The Committee appointed to consider the details of the promenade and floral fête in the wholesale flower market, Covent Garden, for the benefit of the Fund, reported that it had been fixed for the evening of June 6th, from 9 P.M. to 12 P.M., and that Princess Mary, Duchess of Teck, had announced her patronage of the fête. The arrangements for the dinner for the evening of July 13th were also considered, and a letter was read from Mr. E. Roger Cutler, stating that his daughter, Miss Marie Belval, had kindly promised her assistance as a vocalist gratuitously, and the Hon. Secretary was instructed to acknowledge Mr. Cutler's letter with thanks and the acceptance by the Committee of Miss Belval's kind offer. Some further details were considered. A hearty vote of thanks to the Chairman closing the proceedings.

—— THE SCOTTISH AURICULA SHOW.—In the prize list of this Show sent to us for publication last week, we are informed that the words "Blair Adam" and "Doune" should have been Blair Drummond in both cases, this being the address of Mr. Wm. Kilgour, the winner of the prizes indicated. We are also requested to state that the variety named "Cathedral (Browning)" should have been Downing's Catherine. We assumed the name had been copied from a label, and for aught we know to the contrary, might have represented a local variety.

ROYAL HORTICULTURAL SOCIETY.

MAY 22ND.

SCIENTIFIC COMMITTEE.—Present: D. Morris Esq., in the chair; and Messrs. G. Murray, G. F. Wilson, F.R.S., J. O'Brien, W. G. Smith, Boulger, A. D. Michael, A. McLachlan, F.R.S., Professor Church, Dr. Lowe, and Dr. Masters, F.R.S.

Lily Disease.—Mr. George Murray reported that the specimens sent were too much decayed to examine satisfactorily. Probably the appearance was due to fungus, Peronospora or Ovularia, or both.

Monstrous Cattleya.—Mr. Ridley sent a report on the Cattleya exhibited by Mr. Smee at the last meeting:—"This Cattleya is a good example of petalody. The bract subtending the flower is replaced by a petal. The dorsal sepal is lip-coloured, as are the laterals, but in a less degree. The left petal is also lip-coloured, and has the same shape as the lip. The right petal is adnate to the column, and lip-coloured; at about three-quarters of its length from the base it bears an anther cap on its edge—of course, abnormal and abortive. The lip is tolerably normal, but not lobed. The column seems to have entirely lost the staminal whorl; clinandrum, anther, and all traces gone. The rostellum and stigma are present."

Jaborandi.—Mr. Morris reported that the specimen exhibited by Mr. Lynch at the last meeting was the true plant, Pilocarpus pennatifolius, which yields the medicinal substance above-named.

Fertilisation of the Scarlet Runner Bean.—With regard to Mr. Burbidge's remark at the last meeting, that "the Scarlet Runner does not set its fruit in South America, but in this country it fruits freely, owing to the bees, which bore through the base of the flower," Mr. Henslow observed that this was an error, as no flower is benefited by the perforations made by insects from without. The bees fertilise them, however, in the legitimate way; but in their absence the Scarlet Runner can scarcely

fertilise itself. The French Bean, on the other hand, is quite self-fertile, as horticulturists can force it in winter.

Shoots of Spruce Fir Injured, &c.—Referring to the specimens exhibited on the last occasion Professor Boulger suggested that the injury might have been occasioned by hail. The general concensus of opinion, however, was that the damage was, as previously stated, effected by squirrels. Mr. McLachlan alluded to the death of Hollies in consequence of the "ringing" of the bark by rabbits. Similar injuries were detailed as caused by deer.

Self-coloured Tulip.—A pale primrose-coloured Tulip, shown by Mr. Walker, was referred to Mr. Baker for report. It had occurred among a bed of T. Gesneriana, of which it is only a seedling form.

Castasetum.—A specimen was referred for name, and considered to be C. viride (Monacanthus).

Scilla Bulbs, &c.—Dr. Lowe showed elongated bulbs of this species, which were referred to Dr. Masters for examination and report.

Iris.—Dr. Lowe also showed a yellow flowered Iris he had originally received from the late Rev. Harpur-Crewe, and which was referred to Mr. Baker for report. Mr. Baker reports it to be I. lutescens.

Tetramerous Pear.—Professor Boulger showed flowers of a Pear in which the parts were in fours.

Notched Lilac Leaves.—Mr. Boulger also showed some leaves of Lilac which, owing to close adhesion one to the other, had developed a little notch or rather lobe, on one side of the obstruction.

Sphinx ocellata.—Mr. Roupell sent a specimen of this moth in illustration of "mimicry," the dull colour of the upper wings approximating to that of the dead leaves of the Apple, on whose branches it rested. This view did not find favour with the entomologists present.

Beetle Attacking Mangolds.—Hon. and Rev. J. T. Boscawen sent specimens of a beetle which attacks Mangolds. Referred to Mr. McLachlan.

Himalayan Primula.—Rev. C. Wolley Dod sent a specimen with the following communication:—"In the winter (January, 1886) I received amongst many others from Dr. King a packet marked Primula reticulata. This produced in April, 1886, a fine crop of P. sikkimensis. When these were removed, there came up in spring, 1887, a small crop of very delicate seedlings, all with distinctly cordate leaves, and very different from sikkimensis. I sent a few away. Those I kept have nearly all been cleared off by the 'leather jackets.' I enclose the largest left. I cannot make it fit any species described in 'Flora of British India,' *Hooker*. The calyx does not seem to fit reticulata. It is three weeks earlier than sikkimensis under the same conditions.—C. Wolley Dod, *Edge Hall*, May 21st." The specimen was referred to Kew for comparison, and has been determined as P. glabra.

Cynomorium coccineum.—Mr. Morris showed a fine specimen of this curious parasitic plant from Gogo, whence it had been received from the Governor of Malta, Sir Lintorn Simmons. This is the fungus Melitensis of old writers, and was formerly valued as an astringent; so highly was it valued that the plant was placed under the protection of a special guard.

Canker of Maréchal Niel Rose.—Mr. Froud, gardener to G. N. Marten, Esq., sent a portion of the stem of this Rose cut 6 inches below the soil. The plant was covered with buds which failed to open, and on examination the stem was found cankered. The specimen revealed traces of old injury rather than of present mischief, the appearances being possibly due to the attacks of fungus. Mr. Morris remarked that Maréchal Niel was the best Rose for the tropics, where it is not subject to canker.

Double-spathed Richardia.—Mr. H. Tull exhibited a specimen of Richardia æthiopica with a double spathe.

Dendrobium Flower on the New Growths.—The same exhibitor sent a specimen of this not very uncommon occurrence, which is analogous to the midsummer shoots of the Apple.

Conifers.—Dr. Masters showed specimens of Juniperus flaccida, a very elegant species from the highlands of Mexico; also fine cones of Araucaria Bidwilli and Pinus Pinea, received from M. Naudin, Villa Thuret, Antibes.

Specimens were exhibited of the following from Kew:—

Iris Korolkowi.—A species received from Herr Max Leichtlin in 1885, and now flowering for the first time at Kew. It seems to be a variable plant, as the figure in the "Gartenflora" differs in colour from the one exhibited, in which the falls were of a pale lilac or grey-coloured, with narrow lines of purple, and with a deep purple-fringed blotch at the base. The grey standards are also lined with purple veins.

Ferula (Narthex) asafœtida.—A handsome, but atrociously smelling Umbellifer, with boldly cut glabrous foliage and umbels of yellow flowers like those of the Parsnip. It is interesting as being the source of the drug asafœtida.

Saxifraga Kolenatiana.—A Siberian species of dwarf habit, with leaves like those of the Aizoon section and flowers not unlike those of "London Pride."

Allium Suwarrowi.—A species of globose many-flowered umbels; flowers about half an inch across, segments spreading, narrow oblong, rich violet; stamens of the same length and colour.

A. Jesdianum.—A species with globose, many-flowered umbels, individual flowers nearly three-quarters of an inch in diameter; segments linear-oblong, spreading, ultimately bent downwards, pale lilac; stamens erect, whitish, longer than the perianth segments.



SUCCESSFUL ROSE CULTURE.

In one of the houses connected with the gardens at Hapsford House, near Frome, the residence of A. G. Hayman, Esq., there is a fine healthy plant of Tea Rose Adam, which has this season perfected upwards of two hundred blooms. This is worthy of note, owing to the fact of its being rooted in an 11-inch pot only, and also on account of the great size and good colour of the blooms, many of which were equal to any I have seen at exhibitions. The plant is trained on a trellis near the glass, an intermediate temperature is maintained, and no cold currents of air reach the foliage. It is almost needless to add that this Rose is well attended to by Mr. S. Andrews, and gets a fair share of farmyard and other liquid manure.—I.

FORCED ROSES.

Hybrid Perpetuals that flowered early in the season may now be placed outside if they have been properly hardened; if not in this condition prepare them by exposure to the sun in a cool airy structure. If removed from a close atmosphere their foliage is certain to be seriously injured by sudden exposure. At first place them in a sheltered position, and finally plunge them in their summer quarters. Plants that have made vigorous growth in 7 and 8-inch pots may with advantage be placed into others 2 or 3 inches larger. By this treatment, if carefully watered and the foliage kept free from insects, they will without further trouble in potting be in the best possible condition for forcing another year. The general stock that may require at potting time the reduction of the soil should not be done before the end of July. For H.P.'s good fibry loam, one-seventh of decayed manure, and a little sand should be used. In some loams sand is not necessary, while in those of a heavy nature it should be liberally used. Clay reduced to a powder by drying should be added to light loams at about the same rate as the sand to those of a heavier nature. Soot and bone meal may with advantage be added; a 6-inch potful of each will be plenty to a barrowful of soil.

MINIATURE ROSES.

Such kinds as The Pet are invaluable for conservatory decoration, and few flowering plants in from 5 to 7-inch pots surpass them in usefulness and beauty for a variety of purposes. Cuttings of not quite half-ripened wood strike freely at this season of the year. The cuttings need not be more than 2 inches in length, and will be found to root quickly in sand, if well watered, covered with bellglasses, shaded from the sun, and placed in a temperature of 65° to 70°.

WINTER-FLOWERING ROSES.

Such varieties as Safrano and Isabella Sprunt, that are so invaluable at Christmas and during the early months of the year, are not of great value at this season unless they are cut when the buds are very small indeed. In any other state they are useless for travelling. The flowers of these are so thin and composed of so few petals that they open fully a few hours after they are cut. Other varieties should be plentiful, and in order to give these every chance of doing well during the worst months of the year the buds should be removed as they appear. All the weak growths can be cut away, so that the whole energies of the plants will be devoted to the production of strong wood. By thinning the plants now air and light is freely admitted to the strong growths, and others will be induced to push from the base. The object must be to secure strong well-ripened growth, as weak wood produces small buds. Plants that have been brought forward gradually of Rubens, Innocente Pirola, President, Abricoté, Niphetos, Catherine Mermet, and others will continue yielding their large and delicate buds that will last a considerable time after they cut, provided they are cut before they expand too much. These plants will be pushing up strongly from the base, and it is frequently from these shoots that the finest flowers are produced. They will stand liberal feeding, whether they are in pots or planted out; if the latter, the surface may be mulched with manure. Apply water carefully, syringe freely, and admit air liberally during bright warm days.—N. G.

REVIEW OF BOOK.

A Manual of Orchidaceous Plants, Part 3, Dendrobium, Bulbophyllum, and Cirrhopetalum. James Veitch & Sons, Royal Exotic Nursery, King's Road, Chelsea.

The third part of Messrs. J. Veitch & Sons' important and exhaustive work on Orchids is just to hand, and is devoted mainly to the genus Dendrobium, with a brief consideration of the less important horticultural genera Bulbophyllum and Cirrhopetalum, which are, however, included in the sub-tribe Dendrobieæ. The cultivated Dendrobiums are numerous, but there are also many of such little value for garden purposes that they are necessarily excluded from a work of this characters which does not deal with plants of botanical interest only. Ninety-two pages are devoted to particulars of structure and culture, with descriptions of the best species, varieties, or hybrids, 123 distinct type

being fully considered in the work, besides incidental reference to and short notes respecting other species.

As in the preceding parts this one commences with the leading characters of the genus, and the groups in which the known Dendrobiums are classed. Then follows an interesting and useful account of their geographical distribution and the climate of the districts where they abound. Two excellent maps accompany this portion of the book and serve to illustrate the subject admirably. In the first South-East Asia, comprising India, Burma, the Malayan Archipelago, and the Philippine Islands; the second dealing with the Australian region. Some difficulty has been experienced in the first map—the South-eastern Asia region—in indicating the precise districts where the plants have been found, because in Burma, and Moulmein especially, large numbers came from a limited area, and the names in consequence could not all be printed on the maps. This has been overcome with regard to the Moulmein district by a marginal list of forty-three species, including such well-known garden plants as D. Bensoniæ, D. chrysotoxum, D. Dalhousieanum, D. fimbriatum oculatum, and D. thyrsiflorum, though some of these are by no means confined to that region. One of the most widely distributed Dendrobiums is D. crumenatum, which is found in the Andaman Islands, Sumatra, Java, Borneo, and the Philippine Islands; D. secundum also has a wide range. In Java over sixty species have been discovered, but as these are mostly of little horticultural value, they are, with the exception of six, omitted from the book. Upon the western side of the Indian Peninsula, in Nepal, Bhotan, Western Burma, and Moulmein, are found the chief homes of the genus in this portion of the world. The Australian forms are not very abundant, a few coming from the eastern side, but these, except D. speciosum and its variety Hilli, are mostly more curious than beautiful. The more northern and New Guinean Dendrobiums, D. superbiens, D. bigibbum, D. Phalænopsis, and D. Macfarlanei, are, however, amongst the most handsome members of the genus.

The cultural instructions are most valuable, and full details are given respecting the peculiarities of the different species, as though these are nearly all tropical they vary considerably in their requirements, a few, like D. infundibulum and D. Jamesianum, now classed as a variety of the preceding, which come from a higher altitude, requiring cooler treatment than the others. The descriptions, historical information, and illustrations are all that could be desired, and the book will be welcomed, not only by admirers of Dendrobiums, but by Orchid growers generally, as a useful and reliable addition to Orchid literature.

BARREN STRAWBERRIES.

At pages 405 and 406 "F. J." records his failure to induce Strawberries to fruit, and the Editor invites correspondence on the subject. I do not think I can solve the "puzzle," but at page 414 of the same number the answer to "F. G." goes far to solve the problem. I will therefore, as one that made Strawberry-growing a speciality, give my mode of selecting plants and cultivation.

My mode of securing fertile and strong plants was to plant strong runners in July in rich soil. These along with the main plantations grew into large plants by October, no runners being allowed to issue from them, and they were kept free from weeds. Whenever the flower blossoms appeared in the crown of the plants a careful examination was made, and if any showed signs of barrenness they were instantly taken out. Then, as soon as the blossoms were well up, they were cut from the plant and allowed to throw out runners for again planting in July if possible. If any of the runners showed an inclination to shoot out far before a plant was formed it was pinched, and the shorter ones allowed to root, as being more to be relied upon than the grosser ones. In fact the shorter the runner the better I found the plants to be. After I had secured my plants I dressed the ground, and some varieties rewarded me with a late crop of Strawberries, particularly Garibaldi, not Vicomtesse Hericart de Thury.

When runners could be had from young plants I never depended upon taking them from old ones, believing it to be a cause of producing blind or barren plants. A case in point. My garden has been neglected for eight years; a bed of Dr. Livingstone Strawberry previous to that time never had a blind plant, now many of them are blind.—A. L. B.

WISLEY.

Horticulturists, whether amateurs or professionals, who visit many gardens are often made almost painfully conscious of the formality of design, want of originality, or what may be termed unnaturalness of the majority. Too frequently the larger establishments are the worst in this respect. A pretentious striving after effect results in glaring incongruities or a most tiresome monotony utterly defeating all the objects of a true garden. Many a quiet little country retreat unknown to the horticultural world generally displays more real taste in its arrangement than the "show places;" and satisfactory as it always is to see good examples of cultural skill in plants, fruit, or vegetables, it is a pleasant relief at times to leave the glass houses and wander in a charming garden free from the restraints of the all-prevailing conventionalism. I have had the good fortune to visit some of the best gardens in all parts of the kingdom, and last year when penetrating the wilds of Northumberland I included in my tour Lord Armstrong's celebrated garden, Cragside, Rothbury. Favoured by exceptional natural advantages this has been treated boldly and must be ranked as one of the most remarkable of natural gardens in this country. On Monday last I visited Mr. G. F. Wilson's garden at Wisley, and though totally different in surroundings and scenery, yet for natural treatment and freedom from artificiality it is equally as remarkable as Cragside, but for its collection of hardy plants it is unique. It is an extraordinary garden, and with its owner, designer, and superintendent as conductor, it is one of the most interesting a plant lover could visit. It is not one that can be dispatched with a cursory survey, and a day is far too short to enable a stranger to realise its character and contents. I cannot attempt in the present notes to give anything more than a resumé of its features, in another letter I may have something to say of its occupants in detail,

Wisley has been repeatedly described before, but I will attempt to convey my own impressions of the place and the work, as it contains much that is suggestive. The garden is about five miles from Weybridge, being reached by a pleasant drive along the Guildford road through plantations of Conifers and across wild heaths of Furze now rich with its golden flowers, and is situated at a much lower level than Heatherbank. Some seven or eight acres of level woodland and fields on irregular hill slopes have been there taken in hand by Mr. Wilson, the variety of soils and aspects afforded having induced him to select it as a fitting site for "an experimental garden." The diversity of aspect has been greatly increased, but only gradually; it was not a garden to plan by rule and compass, anything of that character was far from its owner's intention, and he wisely preferred to let it develope slowly, and as the result of experience, than to map it out all at once. Besides, as he rightly observes, very much of the pleasure of gardening is lost when it is drawn up to scale and furnished like a house prepared in haste for a new tenant. So Wisley, as we see it now, is the result of ten years' pleasurable work. "The first season or two," says Mr. Wilson, "we committed many blunders, which it took us several years to correct, and even now we have much more to do, but we have learnt much and are still learning."

The garden is devoted exclusively to hardy plants, shrubs, or trees; there is not a glass house on the place, and even frames are dispensed with, for many thousands of seedlings are raised out of doors in special beds. Digging in banks and mounds occupied with valued plants is tabooed, and the result is that seedlings are springing up in all directions, and one is almost afraid to step lest some precious gem that is being daily watched may be crushed. Conventional paths and edgings are carefully avoided, the ground rises into innumerable mounds of varying height, or sinks into little dells and rivulets in the woodland portion, while in the more open part is a small lake filled with the fragrant Cape Pondweed, Aponogeton distachyon, and other choice aquatics, with higher mounds of a miniature alpine character, and a steeper slope behind these occupied with choice shrubs and trees, or devoted to Lilies.

Amongst the shrubs just now the handsome Exochorda grandiflora (fig. 61) is flowering profusely, and it is one of the features of the garden. This remarkably handsome shrub is one of the numerous valuable additions to our garden plants for which we are indebted to the assiduous collector Mr. Fortune. He first discovered it in the northern part of China in the year 1845, and some short time afterwards he found it in the Che-kiang Hills, and the specimens collected were despatched to Messrs. Standish & Noble of the Bagshot Nurseries under the name of Amelanchier racemosa. It flowered at Bagshot in 1854, and then attracted considerable attention owing to the profuseness with which the flowers were produced and the length of time that they continued in beauty. From examinations then made the name Amelanchier racemosa was found to be inaccurate, and the plant was referred to the genus Spiræa under the name of S. grandiflora, but from certain characters of the fruit the present generic title was finally adopted. The name being definitely determined general interest in the plant seemed to subside, and so we find that although more than thirty years have elapsed since its introduction it still remains comparatively unknown in gardens. This is the more unaccountable, as the merits of the shrub are of no ordinary character. When we have hardiness of habit combined with beautiful flowers and a lengthened period of blooming it is a little surprising that such valuable qualities should remain generally unobserved or neglected; still this is only one of the many instances which are constantly occurring of useful and attractive plants being gradually lost in cultivation. The Exochorda is diffuse in habit, and occasionally requires a little pruning to keep it in form; and it can scarcely be surpassed for planting in shrubberies, as it rarely exceeds 9 feet in height and flowers freely during April and May. Mr. Wilson cuts the shoots in freely, and he finds this is the only way to ensure its annual free flowering. The same practice is adopted at Stillyans, the residence of Lady Dorothy Nevill in Sussex, with equally satisfactory results.

Lilies are a specialty at Wisley, and though grown in several different soils, under varying conditions, and in distinct aspects, all alike seem to thrive most luxuriantly. At Weybridge, upon a hill of sand said to be 70 feet in depth, beds have been formed 5 deep, filled with loam and peat, in which Liliums lancifolium, auratum, Krameri, and tigrinum flourish splendidly; but the soil has been excavated for several feet all round to form a kind of dell, and shelter is afforded by trees. At Wisley two other situations have been tried, one in the natural black vegetable soil, and damp shaded woodland portion, and the other on a steep northern slope of loam fully exposed. In the woodland the Lilies are the most satisfactory in a dry season, and on the slope in a dry one, but at the present time it would be difficult to say which are the stronger and better. L. Hansoni, L. Krameri, L. Browni, L. giganteum, L. lancifolium varieties, and many others make up a

wonderful collection, not in single plants or pairs, but in fine clumps and beds of dozens or scores, and the stock of Lilies is estimated at 100,000.

Exceedingly beautiful at the present time is a mound covered with



FIG. 61.—EXOCHORDA GRANDIFLORA.

Phlox setacea varieties, purple, pink, and white, from the late Mr. Nelson's Aldborough collection, large patches densely covered with flowers, looking at a distance as if clear well defined colours had been laid on liberally from an artist's brush. A grand bush of double Furze also surmounts a mound, and with the lighter yellow but bright Genista hispanica furnishes a welcome mass of colour. A solitary but well developed plant of moderate size of a deep red Japanese Maple lights up another portion of the open garden, while in the woodland we have delightful glimpses of brilliant Azaleas of the Mollis type and rich Rhododendrons. Numbers of the finest named Rhododendrons have been planted, all with too close a resemblance to caucasicum being rigidly excluded, or if found are destroyed. They were originally

planted for protection, but were found to succeed so well and to form so pleasing a feature that the collection was wisely extended, and with the seedlings obtained the varieties include some of the best and most distinct.

For protecting delicate plants or beds of seedlings several methods have been tried, that found the cheapest and most convenient now being iron hurdles covered with green scrim, which breaks the force of the wind, yet permits a free circulation of air. Split bamboos secured to hurdles in a perpendicular position have proved similarly useful, but rather expensive; split wood of various kinds has been tried in a similar way, and dried Furze tied to hurdles makes a very effective hedge. This is employed for the larger divisions as protection for hedges of Rosa rugosa, of which there are thousands of seedlings, and in some cases Clematises have been planted to cover the Furze. Still, speaking of hedges, it may be added that Mr. Wilson commends the Cherry Plum for this purpose, but to utilise it he takes up stems at intervals, and these are worked with choice varieties of Plums, a combination of the useful with the ornamental that many could appreciate. At one spot, what is termed the "hot bulb" bed, where the most delicate and choice bulbous and similar plants are grown, protection is afforded at the back by ground glass with Furze hedges at the side and open to the south, but this is an extreme case, and the only one in which glass is used.

It is really a philosopher's garden, and is aptly designated "experimental," for when plants are being tried for the first time, two or three different kinds of soil are prepared in the same situation, and it is soon found which is preferable. Seeds are sown in different positions with the same object in view, and several instances are noticeable of the ready way in which the seedlings thrive in some places. Primula japonica, for example, sown on the bank of a small rivulet is flourishing low down near the water, yet on the top of the bank plants of exactly the same age are not one-fourth the size, with comparatively puny flower stems. As Mr. Wilson observes, you never know the capacity of a plant until you have tested it in a variety of situations, and in illustration of this he points to the beautiful glaucous-leaved and bright blue Omphalodes Luciliæ. Upon a mound in the woodland is a fine healthy plant such as is seldom seen, and which many would be well contented with, but on a bank in a more exposed situation another plant is so much more vigorous that it might be taken for a stronger variety.

A word or two about the Gentians must conclude this week's notes. At Wisley Gentiana acaulis seems to have found a congenial home, for it both grows and flowers in the most satisfactory manner. By the lake is a beautiful bed of it, about 2 square yards of vigorous plants in one bright green mass, and upon this 600 large deep blue flowers have been counted, a good proportion of which are still fresh. Near this, too, are some highly valued gems, varieties of G. acaulis collected in the Swiss Alps by Mr. Scott Wilson, our courteous conductor's son. Flowers of these were recently submitted to the attention of the Royal Horticultural Society's Floral Committee, when they were much admired for the interesting variations and delicate tints they displayed. There are four well marked forms, one very pale, nearly white; another a clear bright pale blue, very beautiful; a third of a rather deeper blue, and approaching a double form; the fourth, the most remarkable of all, being a distinct pink hue, all the blue tint having disappeared. The plants are small and require careful watching, but the characters of the varieties have been admirably fixed on paper by an accomplished artist, Miss Florence H. Woolward, who evidently possesses a happy facility of combining in her numerous drawings of plants strict botanical accuracy with artistic effect. The lovely Gentiana verna shows its brilliant little blue flowers in several places; the rather fastidious G. ornata and many others are equally suited with comfortable quarters in the Wisley garden. But I must stop for the present, and reserve some further observations for another contribution.—L. CASTLE.

COCHIN CHINA VINE—VITIS MARTINI.

AN apparently new species of Vine has been received at Kew from the Botanic Gardens, Hong Kong. It was sent by Mr. Ford as Vitis Martini, *Planch.* From botanical specimens also contributed by Mr. Ford to the Kew Herbarium, Professor Oliver has identified the plant as Vitis (Ampelocissus) Martini of Planchon, but he is doubtful whether it is specifically distinct from Vitis barbata, *Wall.*, of Bengal and Burma. As plants of this Vine have been distributed from Kew to correspondents in the colonies it is desirable to place on record all the available information respecting it. In the report of the Superintendent of the Botanical and Afforestation Department, Hong Kong, for the year 1885, the following interesting account is given of the Cochin China Vine:—

"Another plant of considerable interest is a new tuberous-rooted Vine, Vitis Martini, *Planch.*, from Cochin China. It fruited this year in Hong Kong for the first time. The seeds were procured from the Botanic Gardens, Saigon, in 1883. The seedlings were planted out the same summer and made several shoots, each of which died down in the winter. They began to make fresh shoots about the middle of April, 1884, and grew well during the summer, but showed no inclination to flower; and again died down in the winter. Last summer they started vigorously and showed flower about the end of May. Many of the bunches, however, failed to develope fruit, owing, apparently, to imperfect fertilisation; but there was a good average crop of bunches on the canes irrespective of the failures. The fruit was ripe in October, many of the bunches weighing a pound each. The berries, when ripe, are jet black, and rather under the average size of ordinary Grapes. The seeds are large in proportion to the size of the berry. The flavour is a peculiar blending of sweetness and acidity, very pleasant, but tending, in my case, to leave a curious smarting sensation on the tongue; others might not find this peculiarity at all objectionable. The flavour might be altered, as is well known, by varying the mode of cultivation; but the size of the seeds is likely to prevent the Grape becoming popular as a table fruit; it may, however, be very well adapted for a wine-producer.

"A number of seedlings of this Vine were distributed amongst residents of the colony, but I learn that none of these plants have fruited. A few remarks as to the mode of cultivation may therefore be useful. The tubers should be planted at a distance of 12 feet apart in well manured soil, taking care to keep the manure near the surface, as the tubers take a horizontal direction and do not penetrate the soil to any great depth. When the shoots appear in the spring it is well to cut off all the weak ones, leaving only four strong canes; these should be trained along a trellis or wall, as the case might be, leaving a width of 3 feet between the canes. All the lateral branches should be pruned back to within one bud of the main rod, except those laterals that show bunches; but it will be found that very few bunches will be developed on the lateral shoots, most of the bunches springing directly from the main rods; but in the case of a bunch springing from a lateral branch the branch should be stopped at the second bud above the bunch. The laterals might be allowed to grow till they are 2 feet long. It will then be seen if they are likely to throw out bunches or not. If not, prune them back as described, and also pinch back all subsequent growth as it appears. It may be found necessary to thin out the leaves to allow the sun to get at the branches, but in doing this great care should be taken not to break or otherwise injure the leaf directly above the bunch. If this happen to be accidentally removed the bunch below it will ripen immaturely and soon shrivel up. It is an advantage to thin out the bunches, leaving a space of 15 or 18 inches between them. It is also advantageous to thin the berries, leaving hardly one-half of the original quantity on each bunch; but I am afraid this process would prove impracticable if the Vine were extensively grown, owing to the labour it would entail. After the fruit is gathered the Vines require no farther attention till spring. By way of experiment one lot of plants were allowed to grow at will. Some of them threw up as many as a dozen suckers and produced laterals in profusion, but they all failed to flower. Another lot was transplanted into well-manured ground just as the crowns began to push in the spring; they, too, failed to flower, and presented rather a sickly appearance during the summer.

"The Horticultural Press has already suggested that this Vine should receive the attention of Vine growers in the wine-producing countries of Europe where the phylloxera has denuded the vineyards of the old class of Vines. There being no phylloxera in Hong Kong, I cannot say whether the dreaded insect would spare this Vine, but in view of the wonderful improvements that have been and can be brought about by skilful and persistent cultivation, it is not unreasonable to surmise that this new Vine may ultimately become a wine-producer. It is easily cultivated, and seems to be well adapted for a tropical climate, or a climate in which the resting season is comparatively cold and the growing season hot."—(*Kew Bulletin.*)

THE LINNEAN SOCIETY.

ON Thursday last the centenary anniversary meeting of the Linnean Society was held at the Society's rooms, Burlington House; and in celebration of the Society's centenary there was a considerable addition to the programme of an ordinary annual meeting. The chair was occupied by Mr. W. Carruthers, the President, and there was a large attendance of Fellows and Associates. On the right of the chair was seated Sir R. Owen, Sir Joseph Hooker, Professor Flower, and Professor Thiselton Dyer, who had been specially selected to take prominent parts in the proceedings of the day. There were also present Sir J. Lubbock, M.P., and Professor J. G. Allman, former Presidents of the Society; Dr. H. Woodward, Professor Stewart, Professor G. B. Howse, Mr. J. Colebrooke, Dr. M. T. Masters, Professor St. George Mivart, Dr. A. Günther, Sir Walter Buller, Dr. A. C. Prior, Dr. R. Hogg, Professor M. Duncan, Mr. J. G. Romanes, Colonel Grant (companion of Speke), Mr. Bateman, and Mr. Olsen of Sweden.

The Council having decided to make an exception to the general rule by admitting a few ladies to be present, seats were reserved for those whose relatives were officially connected with the proceedings, as President, former President, Members of Council, Speakers, Treasurer, and Secretaries. The following were invited, and were received by Mrs. Harting in the drawing-room of the librarian's apartments:—Mrs. Carruthers, Lady Lubbock, Lady Hooker, Mrs. Allman, Mrs. Lyell, Mrs. Busk, Mrs. and Miss Flower, Mrs. Thiselton Dyer, Mrs. Anderson, Mrs. Albert Michael, Mrs. Howes, Mrs. Seebohm, Mrs. Scott, Mrs. Maxwell Masters, Mrs. Crisp, Mrs. Daydon Jackson, Miss Flower, and Miss Harting.

The first business was the election of the King of Sweden as an honorary member of the Society.

The President said that His Majesty took great interest in the development of science, and, considering that this was an important meeting of the Society, whose history was of interest in Scandinavia as well as in England, it seemed to the Council that it would be appropriate to elect the King of Sweden an honorary member.

The election having been carried by a show of hands, and cheers,

M. Olsen acknowledged the compliment on behalf of the King of

Sweden, who, he had no doubt, would be pleased to accept the honour which had been conferred upon him. His Majesty, he knew, took great interest in scientific subjects, and if he had been in England he would have attended that meeting, not only to show his attachment to science, but also to do what he could to unite more closely this Society with the corresponding Society in Sweden. (Cheers.)

The Treasurer submitted a financial statement, which showed a total income for the past year of £3246, beginning with a balance of £321, and leaving one of £302. The sum of £1405 had been spent upon publications.

Mr. D. Jackson, Botanical Secretary, read part of a paper giving a history of the Linnean books, herbarium, and other collections. In the course of the paper it was stated that Sir J. E. Smith, on the recommendation of Sir J. Banks, bought the entire collection and library of Linnæus in 1784, and six years later founded the Linnean Society. He remained President till his death in 1828, when the Society bought the entire collections (except the minerals, which were sold in 1794), and have carefully preserved them in their original state to the present day. The story that the vessel that brought the collections to England was closely chased by the man-of-war sent to intercept it was not accepted by the author.

The President, in his annual address, said that in no previous year had the Society to mourn the loss of so many members and co-workers at home and abroad. They had just received the sad news of the sudden termination of a young and promising life. William Threlfall a few months ago was enrolled a Fellow. He set out for the East to explore the flora of some districts in the Ottoman Empire in Asia. The Council had taken steps to help him in his work, and they were all looking forward to important results from his travels, when they were startled to learn that by a distressing accident he had lost his life. The work of the Society was being carried on more actively than ever; young, earnest, and able men were stepping to the front. That day they had to survey a century rather than a year. The acquisition by Dr. J. E. Smith of everything which Linnæus possessed relating to natural history or medicine, with his entire library, manuscripts, and correspondence, raised him at once to a position of high eminence among the students of natural history in England. The transference of the collections to England created a second centre for naturalists in London. Sir J. Banks had opened his house and given free access to his collections and library to scientific inquirers; and he rendered an unselfish and important service to science by exerting his influence to induce Smith to secure a rival and finer collection. The system of Linnæus had then completely displaced all others. The happy invention and careful definition by Linnæus of the words he employed, the precision of his descriptive characters, his terminal nomenclature, and above all the clear and certain divisions of his sexual system, presented such favourable contrasts to the systematic works of earlier authors that he had secured absolute sway over English naturalists. There existed at the time a small Society in London devoted to the study of natural history. It seemed to have been a kind of mutual improvement society which did not publish memoirs. The Natural History Society continued to hold its meetings for several years after the beginning of this century, and when the meetings could not be kept up, and the Society was dissolved, the books and other property were handed over to the Linnean Society, including the ivory hammer still used by the President. The new impetus given to natural history by the arrival of the Linnean collections showed the urgent need of a society which did not limit its operations to the mutual benefit of its members, and this led to the formation of the Linnean Society, whose first year's income was £65 17s. 6d. For the first fifty years the members were satisfied with annual parts of Transactions, two, three, or four years being required to make up a volume. In 1855 a quarterly journal had become necessary. The distinguished position of the Society was due less to its age than to the remarkable activity of its Fellows, the importance of their work, and the speedy and efficient manner in which the communications were put before the world. (Cheers.) During the past year the Society had published seven parts of Transactions, four devoted to botany and three to zoology, containing 429 pages, eighty-nine plates, and two maps. During the same period there had been issued twenty numbers of the Journal, nine being botanical and eleven zoological, containing 1151 pages, fifty-six plates, and fifty-four woodcuts, together with the proceedings for the year, requiring sixty-five pages of letterpress. These publications contained papers of the highest importance in all departments of science. Not everything submitted to the Society found a place in its publications. Every communication was reported upon by one or more experts, and was afterwards carefully considered by the Council, and only real contributions to knowledge, expressed in fitting language, were published. Fellowship was not limited to men of science, but it was extended to lovers and patrons of science, who often rendered valuable services. At one time the reading of papers at the Society's meetings was not followed by discussion, and the proposal to allow discussion was at first opposed as an innovation "that would turn the meeting room into an area for gladiatorial combats of rival intellects and lead to the ruin of the Society." (Laughter.) The President also gave some account of the Society's collections.

On the motion of Sir J. Lubbock, M.P., a cordial vote of thanks was given to the President for his address.

The next item on the programme was the pronouncing of eulogia on Linnæus, Robert Brown, Charles Darwin, and George Bentham.

The eulogium on Linnæus had been prepared by Professor Thöre Fries, the present occupant of the chair of botany at Upsala. In the unavoidable absence of the author, a translation of the eulogium was read by the President. Professor Fries began by referring to the profound sleep of the natural sciences through the Middle Ages, to the hard battles that had been fought before men of science could liberate themselves from the fetters of a narrow orthodoxy, and to the restraining bands men of science had forged for themselves by attaching infallibility to Greek and Roman authors rather than to the works of Nature. They worked slowly forward to a truer conception through the sixteenth and seventeenth centuries, longing for one who should bring order and quickening life. At last came Linnæus, to whom, although a poor and unknown youth, the world almost immediately paid homage as a master of the extensive dominion of natural history. And to-day his name was mentioned with the highest respect in all lands upon which culture had shed its benign rays. Passing over the story of his eventful life the eulogist surveyed the part taken by Linnæus in the development of the science to which his penetrating activity extended itself. Upon botany his systematic mind stamped its impress for all time. Industrious naturalists had described as well as they could plants brought from all parts of the world, but their descriptions were a shapeless mass of material. There was no lack of system, but none satisfied even the unassuming demands of those times. The Upsala student, aged 22, exhibited to his teacher some outlines of a system which, when published under the name of the sexual system, rapidly supplanted all predecessors. It was so simple that a child could grasp it. Contemporaries and successors rejoiced at the discovery of the thread of the labyrinth which for centuries had been sought in vain. Linnæus, with clear insight, had openly suggested the weakness of the system and put forward the establishment of a natural system which he laboured to find. Down to our days botanists had tried to raise the edifice of a natural system of plants without getting it complete or even being able to agree on a ground plan. But all agreed that Linnæus, over against an artificial system, set forth in a clear light the character and form of the natural one, marked out the way for its development, and secured its supremacy. By successive works Linnæus reconstructed descriptive botany in almost every detail, and that in such a manner that the opinions he expressed and the laws he established are even to this day approved of as in all essentials correct. From botanical language he swept away its inrooted barbarism, and gave the proper stability by accurately limiting every botanical idea and furnishing it with definite appropriate nomenclature. For describing plants and naming them he set up simple practical rules based on a careful analytical examination of the structure of many thousand species, especially their flowers and fruits. In opposition to all his predecessors he drew a sharp line between species and variations. To the then known 8000 species he gave not only new and appropriate names, but also new definitions, and he added critically tested statements of their nomenclature by prior authors, together with an account of their native country, manner of appearing, properties, uses, and so forth, and all this in a way easily apprehended in accordance with the simple laws he himself had established. All his work he endeavoured to arrange on the most natural and easily comprehended plan. In small as well as large things he proved himself a master yet unsurpassed in producing regularity and order where previously ignorance, carelessness, or arbitrariness had generated obscurity and confusion. (Cheers.)

It was sometimes said he was not qualified for the study of vegetable anatomy, and revealed a one-sided love for descriptive botany; but the reproach usually came from one-sided anatomists. The amount of what he did bordered on the miraculous. He himself admitted that the naming, describing, and classifying of plants was not the only or the highest function of the science, but only a necessary condition for a successful study of the more important parts. It was almost impossible to point to an investigator in botany who had studied the world of plants from so many sides, and who pointed out so many new aspects from which it ought to be examined. Much that had been said about botany applied also in the department of zoology. By establishing new, easily understood laws, he made scientific descriptive zoology, and he laid the first groundwork of a real system. In the history of mineralogy he occupied a by no means unimportant position, chiefly through his rearrangement of the mineral kingdom. More conspicuous was his energetic zeal in the field of medicine. He attempted to arrange scientifically the different forms of diseases. It was easy now, compared with what it was in the time of Linnæus, to bring together collections from widely distant places. Untiring was his zeal and unparalleled his power of stimulating persons of the most varied positions in life—monarchs and students, lords and poor seaman, bishops and ignorant tradesmen—all to work to one end. Devoted scholars, young and old, surrounded his chair. His disciples went to unknown regions to collect for him the treasures of nature, and many of them perished in foreign lands as the martyrs of natural science. Nowhere, next to his own native land, had his name been so revered as in England. The botanist, Dillenius, pressed him to remain at Oxford "to live and die with him." He was in active correspondence with nearly all England's naturalists, several of whom had enjoyed his instruction at Upsala. England, unluckily for Sweden, finally became his heir. In conclusion, Professor Fries said:—Many are consequently the ties by which the memory of Linnæus is united with England, the strongest, however, is the Linnean spirit—the genuine spirit of freshness and enterprise in which scientific research has continued, and still continues, in England. Is it not probable that this fact is due, in some measure at least, to the transfer of the Linnean collections here? At any rate it was that which gave the primary incentive to the formation of this Society, which has now, for a hundred

years, uninterruptedly manifested its vigorous life, extending its useful activity more and more over the whole globe. The precious gift of Sir James Edward Smith was indeed a noble seed, since grown up into a strong plant, which has borne flowers and fruits from year to year in abundance. Its vitality is a guarantee that it will thrive and flourish, so long as the Linnæa borealis, ever green, spreads its fragrance over young and old, high and low, rich and poor, in the mighty forests of the north. (Cheers.)

Sir Joseph Hooker pronounced the eulogium on Robert Brown, who was recognised as the greatest botanist of his age. Passing over the life, history, and personality of Robert Brown, the eulogist gave some account of his investigations and discoveries relating to the morphology, classification, and distribution of plants, and especially to their reproductive organs, their structure and economy—investigations which display an untiring industry, an accuracy of observation and exposition, a keenness of perception, together with sagacity, caution, and soundness of judgment, in which he has not been surpassed by any botanical writer. Where others have advanced beyond the goal he attained to, it has been by working on the foundations he laid, by the light and aids of correlative advances in chemistry and physics, and by the use of optical instruments unknown in his day. His collection of about 4000 species of plants belonging to all orders, and three-fourths of them new to science, in nine years, was a feat unexampled in the history of botanical science. In the course of a detailed review of his works the Professor gave some personal reminiscences, including these:—"His appetite for acquiring botanical knowledge amounted, I believe, to voracity, while his wonderful memory enabled him to retain, and his methodical faculties to classify all he had acquired. Of that memory and of his readiness in utilising it I had, thanks to his kindness, much experience. He seemed to me never to forget a plant that presented any feature of interest if he had but once seen it, and he could single out the specimen that he had examined from a sheet full of duplicates. It was the same with books; those of the old authors especially, as Ray, Linnæus, Rumph, and Rheede, they were all familiar to him, and he could often turn to a volume, and sometimes to a page, for a statement or figure without the aid of a reference. Thus, at the age of twenty-eight, when he sailed for Australia, it was as an accomplished botanist.'

Professor Flower pronounced the eulogy on Charles Darwin, who, he said, had special claims on their consideration, inasmuch as a large and very important portion of his work was first communicated to the world by means of papers read at their meetings and published in their journal. His life and work, however, were so familiar and had been exhaustively treated so recently, that the task assigned him could be discharged with a brevity which would be by no means the measure of their appreciation. They were concerned chiefly with those great characteristics of Darwin which dominated all others and made him what he was—the consuming, irrepressible longing to unravel the mysteries of living nature, to penetrate the shroud which conceals the causes and methods by which all the wonders and all the diversity, all the beauty, yea, and all the deformity too, which we see around us in the life of animals and plants, have been brought about. Against our ignorance on those subjects his life was one long battle; the work of others, by comparison, was irregular guerilla warfare. His main victory was the destruction of the conception of species as being beyond certain narrow limits fixed and unchangeable—a conviction which prevailed almost universally before his time. It might be admitted that others had prepared the way, and that the work was carried on simultaneously by others who might have attained to the same conclusion; but the fact remained that he was the main agent in the conversion of almost the whole scientific world from one conception to a totally opposite conception of one of the most important operations of Nature. Such a revolution, with its momentous consequences to the study of zoology and botany, was without a parallel in the history of science. This rapid conversion was much facilitated by the fascinating nature of the theory of the operation of natural selection in intensifying and fixing variation as originally propounded in the rooms of the Society independently and simultaneously by Darwin and by Wallace. The theory had been subjected to keen criticism, and difficulties had undoubtedly been shown in accepting it as the complete explanation of many of the phenomena of evolution. That other factors had been at work besides natural selection in bringing about the present condition of the organic world probably everyone would now admit, as as indeed Darwin did himself. That, however, was not the occasion to examine so complex a subject, and indeed the time seemed scarcely yet to have come when it could be done with the necessary calmness and impartiality. But Darwin's work and the controversies that had gathered round it had proved a marvellous stimulus to research. Though he did not, as it had been too rashly said, tear down the curtain which obscured our gaze and lay bare the birth of life, he had lifted the veil here and there and given us glimpses which would light the path of those who followed in his steps, and, more than this, he showed by his life and by his work the true methods by which alone the secrets of Nature may be won. (Cheers.)

Professor Thiselton Dyer delivered the eulogy on George Bentham, whose friendship he had enjoyed. A nephew of Jeremy Bentham, he was early imbued with a taste for methodising and analysing, and through his mother's fondness for plants and the attraction which their classification had for him he was led to study them with marvellous results. He was President of the Linnean Society from 1863 to 1874, and his devotion to its interests knew no bounds. He shrank from no labour; he indexed the first twenty-five volumes of the Society's Transactions; and he delivered a valuable series of addresses. He stood in the footsteps of Linnæus; and, although the descent was oblique, he inherited the mantle of the master whose memory was that day commemorated. (Cheers).

On the motion of Professor St. George Mivart, seconded by Mr Grant Duff, thanks were voted to the authors of these eulogies.

Then followed the presentation of Linnean gold medals to Sir R. Owen as a zoologist, and Sir J. Hooker as a botanist.

The President explained that it had been determined to establish a Linnean gold medal to be presented in subsequent years alternately to a botanist and a zoologist; but on this occasion two were to be presented, and there had not been any question in the Council as to who the first recipients were to be. The medal had on one side a portrait of Linnæus, taken from the bust in the room, and on the reverse the arms of the Society surrounded by the Linnæa borealis. The President first made the presentation to Professor Owen, recounting his distinctions and scientific services, and handed him the medal amid loud cheers.

Professor Owen, who was much affected, expressed his high sense of the honour conferred upon him, and thanked the Fellows for their cordial reception.

The President then made the presentation to Sir J. Hooker, recapitulating his services to science.

Sir J. Hooker, who was warmly cheered, returned his cordial thanks to the Council and the Society.

This terminated the proceedings.

In the evening the annual dinner was held at the "Hotel Victoria," the President being supported by Sir John Lubbock, Sir Joseph Hooker, Professor Flower, Professor P. M. Duncan, and Mr. St. George Mivart. The toasts of "The Queen" as patron of the Society, "The memory of Linnæus," and "The Linnean Society" having been duly honoured, Professor Duncan proposed "The health of the Linnean Medallists," Sir Richard Owen and Sir Joseph Hooker. He recalled the time more than forty years ago when, as one of a band of noisy medical students, he sat upon the gallery of the Royal College of Surgeons and saw a wonderful company of men, including judges, bishops, lawyers, and medical men, assembled to hear the marvellous lectures of Professor Owen in his prime, characterised by fine delivery, wonderful powers of description, and grand generalisation. To him he owed his love of natural history. For long his name had been synonymous with British science to vast numbers of people wherever science was esteemed. To him the medical profession owed much of its modern development through its greatly increased interest in physiological science. As regarded Sir Joseph Hooker, he could not refrain from mentioning his exquisite Himalayan journals as among the two or three most charming books of travel and science in the language. Sir Joseph Hooker, in responding, said the reception of the medal had given him a gratification of a peculiar kind, which no other society could have afforded, inasmuch as his father, grandfather, father-in-law, and uncle had been Fellows, he had personally known eight of its Presidents, and many of his own papers had owed their publication to the Society. Moreover, it was Sir J. E. Smith, the founder, who had induced his father to take up the study of botany. He was grateful also to the memory of Linnæus for his own early studies in botany, which were made with a pin and flowers, making out their parts and names according to the Linnean system; and that he believed to be the most valuable way of beginning. Sir John Lubbock proposed "The Health of the President, Officers, and Council of the Society," to which Mr. Crisp, the Treasurer, replied, and the proceedings closed.

CONVERSAZIONE.

The President and officers of the Linnean Society gave a conversazione on Friday night at their rooms in Burlington House. All the memorials of Linnæus in the possession of the Society were exhibited, together with many other interesting objects.

Among the more interesting exhibits were the personal relics of Linnæus, including a small interleaved almanack for the year 1735, the year of Linnæus's betrothal to Sara Lisa Moræa, his journey to the Netherlands, his doctorate, and the issue of the first edition of the "Systema Naturæ." Linnæus's walking-stick, presented by Professor Hartman in 1849, is said to have been cut and carved by himself during his journey through Lapland in 1732. The carved rhinoceros horn, of Chinese workmanship, is an excellent specimen of Oriental sculpture, the whole inverted base of the horn being carved into an elegant leaf of Nelumbium, the Indian Lotus; surrounding it are smaller Peach, Medlar, and other flowers and fruits, and some fantastic Lizards, with bunches of Grapes and the Li-tchi fruit in their mouths, are crawling over the whole. This was presented to the Society by Lady Smith in 1869.

Very many of Linnæus's manuscripts were also on view, including the earliest extant, the "Hortus Uplandicus," or list of plants in the botanical garden of Upsala and others in its neighbourhood, dating from 1730, and containing the first hint of the sexual system.

The vast collection of letters written to Linnæus (about 3000) was not on exhibition, but the few written by him which the Society possesses are of much interest, being addressed to G. D. Ehret, F.R.S., a German botanical artist of celebrity in the last century, who co-operated with Linnæus in producing the "Hortus Cliffortianus" at Haarlem in 1737, and who afterwards lived in London for many years. One of the letters (a translation), dated October 19th, 1756, is addressed to Dr. Patrick Brown, author of the "History of Jamaica," the beautiful plates of which were by Ehret. It is a very characteristic letter, and shows the great naturalist's enthusiasm and scientific temper so clearly that we reproduce a part of it:—

"I never coveted any book, I know not by what instinct, with more

ardent desire than yours. At length I understood that an English gentleman residing at Stockholm had got it; I entreated him to lend it me for a fortnight, and obtained it. I spent day and night in reading it through; I read it over, but never enough, and returned it. Two things I particularly observed therein, which I had not met with in other authors. The first was the author's most honest candour and humane disposition, who is not sharp upon any, severe to none, nor inveighs against others, as now is the custom among the vulgar herd of authors, but candidly inculcates his own observations without taxing others, because they could not see these things they wished to inspect, but not in their power. The other thing I noted was the writer's perspicuity, who has set forth his plants so correctly, and so exactly to the life, that I could see as it were the very plants themselves before me."

In connection with these an exhibit by Dr. Murie, lately the librarian of the Society, was of interest, being a series of impressions of seals used by Linnæus.

The Linnean medals shown were also very interesting, including the silver medal struck for Count Tessin in 1746, and the gold medal struck for the Count in 1758. Both have a bust of Linnæus on the obverse, while the second has three crowns, representing the three kingdoms of Nature. To Count Tessin Linnæus dedicated in 1758 the first volume of the tenth edition of the "Systema Naturæ." The silver medal by Linngberger, struck by command of Gustavus III. of Sweden after the death of Linnæus, has the usual bust on the obverse, and on the reverse Cybele bewailing her loss; she has a key in her left hand, and a lion and various animals and plants lie at her feet. The motto is, "Deam luctus angit amissi," These medals were the gift of Mrs. J. J. Bennett, in 1876, her husband, long the Secretary of the Society, having received them as a gift from Robert Brown, formerly Librarian and President.

The busts, portraits, and engravings in the Society's rooms of course received much attention, and from them no one could fail to derive an accurate impression of the great Swede's countenance. They included the bust cast from Thorwaldsen's statue of Linnæus at Copenhagen, and that from the original in the Stockholm Royal Academy of Sciences; the alabaster medallion given by the same Society; the Wedgwood medallion lent by Sir Joseph Hooker, which Dr. Solander, who knew Linnæus well, said was a better likeness than any of the paintings; the oil painting on parchment by Hallman, presented by Sir John Lubbock; and that copied by Pasch from Roslin, and a large number of engravings. Among these the most interesting is a mezzotint of Linnæus, full-length, in picturesque Lapland dress. It was painted by Hoffman and engraved by H. Kingsbury in 1795. A collection of photographs from the series by E. M. Fries included views of Linnæus's old dwelling-house at Upsala, his country seat at Hammasby, where he spent his summers and wrote his most important works, his museum, the last letter he wrote with his own hand, and several interesting relics. A few of the rare books from Linnæus's library were also exhibited, including Rudbeck's "Campi Elysii Liber Secundus," 1701, folio, of which only a few copies exist, the greater part of the copies of both volumes having been burnt in the great fire at Upsala in 1702, which destroyed the cathedral, in which the stock, manuscript, and wood-blocks for ten more volumes were lodged. The elder Rudbeck never rallied from the shock, but died in the following December. The set of proofs from engravings from a manuscript copy of Dioscorides, in the Imperial Library at Vienna, is still more rare. Only two copies of the 142 plates were made, one being sent to Linnæus, the other being now in the library of the Botanic Garden at Oxford.

The collection of medals, medallions, and portraits of eminent scientific men lent by Sir Joseph Hooker was specially noteworthy. The Wedgwood medallions included those of Captain Cook and his companions, Sir Joseph Banks, Dr. Solander, and Dr. Reinhold Forster; also of Sir Isaac Newton, Sir Christopher Wren, Dr. Priestley, and Sir W. J. Hooker; also a Sèvres medallion of Cuvier. With the memorials of George Bentham was shown an antique silver watch formerly belonging to Jeremy Bentham, his uncle. Sir Joseph Hooker also lent a large series of silver medals struck for the Royal Academy of Sciences at Stockholm, and several bronze medals.—(*Times.*)



KITCHEN GARDEN.

MUSHROOM BEDS.—Where numbers of beds are made up in winter some of them are almost sure to miss bearing at the proper time, but this is not always a misfortune. In October last we formed three beds; one produced a supply at Christmas, another commenced bearing in February, and the third appeared to be a failure. Knowing from past experience, however, that some which appeared to be failures only required time and favourable circumstances to develope, we did not destroy the bed in question, but left it, and at the present time this bed is producing a daily supply of fine Mushrooms. These beds were all formed in a cool unheated structure, and we would advise those who contemplate destroying beds at the end of three months or so after being made up, because they do not bear, to keep them on for six months at least. We have done this many times, and benefited by it. If dry, give the beds a thorough soaking with water heated to 90°, previously sprinkling a very little salt on them before watering, to destroy maggots, and cover with a thin coating of hay afterwards. Cease fire heat for Mushroom houses, and make up a bed or two in the open air to bear in July. This bed will precede the supply of Mushrooms in the fields. We prefer a cool position for the beds at this season, and the manure should be made very firm.

WEEDS.—These are now growing rapidly, and on the action of cultivators now depends the condition of the garden for the whole year. If they are allowed to seed, after trouble is inevitable, but if they are carefully hoed out by the roots now in every part the hoe can reach, and pulled up by the hand where they cannot be hoed, a clean garden through the season will be the easily accomplished result.

EARTHING UP CROPS.—We have heard some growers say they did not believe in earthing up; we have practised it for thirty years and regard it as good practice. Potatoes are greatly benefited by it, as it keeps the stems firm and prevents the tubers near the surface from becoming green and unfit for the table by exposure to the light. All Potatoes should be earthed up when the stems are about 8 inches high, and many of them require this attention now. Cabbage, Cauliflower, Brussels Sprouts, Broad Beans, Kidney Beans, and in short everything in this way, should also be earthed up to steady the stems and prevent the roots being exposed to the sun. Where the surface of the ground is very hard a fork may be used, but where the ground is friable earthing up may be done with a drag hoe.

CUTTING ASPARAGUS.—Of late Asparagus has been growing freely, and many good dishes have been secured. Growers, particularly amateurs, are often afraid to overcut it. There is little danger of this during the first stage of its growth. Let us take forced Asparagus as an example. The heads of this are cut as soon as they are high enough for us to use, and every one that follows is cut also, and this induces the whole of the crowns to push until there are from two to three dozen cut from each root, but it is very seldom that so many are cut from roots in the open ground. It may be that only two heads are seen growing from a root. These are looked upon as the only growths that will come, and one is cut and the other allowed to remain. All may be cut until the 1st of June at least, and after that more growths will appear that will mature during the season; but plants under three years old should not be cut, and weakly ones ought to be avoided, as by missing cutting for a season the plants will gain strength and the beds bear more heavily afterwards.

LETTUCE AND ENDIVE.—Paris Market is still our earliest Lettuce. Spring-raised plants are now in fine order for cutting. The supply of Lettuce should now be constant by successional sowings. From now onwards for three months we sow a pinch of seed every fortnight, and plant out a few dozens from each, which give us a constant supply. It is too early to sow the main crop of Endive, but as a few plants are often required about the end of July or in August a pinch of seed of the green Moss-curled may be sown at once.

SALSAFY AND SCORZONERA.—These are two most useful winter vegetables, generally cultivated in large gardens, but not so much grown in small ones as they should be. They are both perfectly hardy, and may remain in the ground all the winter. We use them largely from November until April, and dig them up as required. The roots penetrate like a Carrot, and will grow in any deep fertile soil. Grubs never trouble them, and as they may be grown in rows 10 inches or 1 foot apart and 4 inches from plant to plant, a large quantity may be secured from a small space. The present is the best time to sow the seed, as the roots will develope fully by October, and there is no danger of the plants "bolting," which is apt to occur from early sowings.

FRUIT FORCING.

VINES.—*Early Houses.*—Where houses have been cleared of ripe fruit the foliage of the Vines should be cleansed of dust and red spider, employing tepid water, and, if necessary, an insecticide. On no account allow the borders to become dry, but afford water to the inside borders as necessary to maintain the soil is a moist condition, keeping the foliage clean and healthy to the last, that it may aid in the proper development of the fruit buds for next season. The leaves being fresh and clean keep the laterals in check by pinching, yet if there be anything defective with the principal foliage a little more freedom may be allowed to the laterals.

Houses with Fruit Swelling.—Maintain a warm atmosphere, damping the floors and borders two or three times a day at closing time and again before nightfall. Although fires cannot be dispensed with at night, much may be done in economising fuel by closing early on fine afternoons, but it must be accompanied with plenty of atmospheric moisture. Do not allow the laterals to grow so as to crowd the principal leaves, but keep them well in hand, although where there is plenty of space they may be allowed to extend, yet not so as to necessitate their removal in great quantity later on.

Houses with the Fruit Ripening.—Allow a constant and liberal supply of warm rather dry air, and do not neglect to afford a good watering, and if a mulching of short litter be applied it will tend to a more equable moisture at the roots. A moderate amount of moisture must be accorded for the benefit of the foliage, but it must not be stagnant or it will prejudice the ripening, and without a good heat it is not possible to insure the highest quality; indeed there is no comparison

between Grapes that are ripened in good heat and those finished in a low temperature.

Grapes Scalding.—Muscats and Lady Downe's completing the stoning must be watched in hot bright weather, and in case of scalding air must be admitted more freely for a fortnight or until colouring commences, when all danger will be over. Even Hamburghs are being scalded this season, which can mostly be avoided in their case by a good spread of foliage, and remedied by a bountiful supply of air by day and a little ventilation left on constantly at the upper part of the house, and a genial warmth in the hot-water pipes.

Late Houses.—Late varieties of Grapes in flower must have a constant circulation of dry warm air, and a temperature of 70° to 75° at night, rising to 85° or 90° with sun heat, or without this the thick-skinned varieties do not set well. Thin the berries freely as soon as they are set, but this in the case of the shy setters must be confined to the removal of the smallest and imperfect berries in the first instance, deferring the general thinning until the properly fertilised berries can be determined by their free swelling. There must not be any deficiency of moisture at the roots, therefore afford liquid manure copiously after the Grapes are thinned and swelling, or a top-dressing may be given of some approved artificial manure, distributing it evenly over the surface, and work it in with tepid water. Outside borders, if the weather be dry and the soil light, should be well watered, employing liquid manure at a temperature of 85° to 90° if the Vines are carrying a full crop and are not very strong.

Vines in pots for next year's fruiting should have the leading shoot or cane stopped at 8 to 9 feet, and the laterals or sub-laterials stopped at one leaf as produced. Supernumeraries in recently planted houses should also have the leading shoots pinched at the length indicated for pot Vines—that is, those intended to fruit next season, the laterals and sub-laterals being closely stopped, but the permanent canes may be allowed to make all the growth possible, as well as pot Vines not intended to fruit next season. Young Vines after they become established should be encouraged with plenty of water at the roots and abundant atmospheric moisture, closing the house early on sunny afternoons so as to husband sun heat and save fuel.

Figs.—*Ripening.*—To have fruit in perfection it is necessary to keep it free from damp throughout the ripening process, affording a free circulation of dry warm air. Maintain the night temperature at 65° to 70°, by day at 75° to 80°, and with sun heat 80° to 90°. There is no comparison between Figs ripened in a close moist atmosphere and in shade and those enjoying full exposure and a favourable atmosphere. It is necessary to afford a circulation of air constantly. If red spider become troublesome during the ripening it is a good plan to gather all the fruit about ripe or sufficiently so for its being effected with the fruit in an airy fruit room, and then give the trees a forcible syringing, directing the water against the under side of the leaves so as to dislodge the pest, and clear water being used and air admitted rather freely it will not interfere with the ripening of the fruit remaining, and by pursuing this process the pest may be kept from increasing very much until the fruit is gathered, when it may be destroyed by sponging or otherwise applying an insecticide.

Second Crops.—Generous treatment will be necessary to enable the trees to swell the second crop, syringing twice a day to keep red spider in check, and affording liquid manure when watering is necessary, trees in pots requiring it daily, and those in borders once or twice a week according to the vigour of the trees and extent of the rooting area, those with borders of limited extent requiring it more frequently than those with the roots less restricted. The second crop must be thinned where thickly set before the Figs are the size of Walnuts, and in thinning reserve the largest fruits at the base of the shoots.

Young Trees for Next Season's Forcing in Pots.—Those coming on for early forcing must not on any account be neglected, or they will disappoint the grower. They must have all the light possible, and not be at a greater distance from the glass than is necessary for their growth, keeping them well syringed and supplied with liquid manure, so as to secure a sturdy growth, and when the growth is complete they may be placed outdoors in a sunny corner to induce rest, but they must have the wood thoroughly ripened, as all fruit trees, especially those for very early forcing, require to have the wood matured early.

Cherry House.—When the whole crop is perfectly ripe the chief consideration will be to prolong the season to preserve them fresh. Shading will do so, but it is only desirable when the fruit is exposed directly to the sun owing to the limited foliage. Free ventilation must be attended to, and in hot weather a sprinkling of the surface of the border in the hottest part of the day will assist in keeping the fruit plump. The roots must not be neglected in the supply of water, for dryness is inimical to the development of the buds for the ensuing crop of fruit.

FLOWER GARDEN.

Bedding-out.—In many districts a considerable number of plants have been put out, but on the whole not much is gained by very early planting. Bright sunshine, easterly winds, and cold nights are not favourable to a good start, and drenchings of cold water are anything but beneficial. In most localities, the bulk of the Pelargoniums, Calceolarias, Violas, Verbenas, Pyrethrums, Lobelias, Marguerites, and other comparatively hardy plants may well be planted during the first week in June; but a week later is quite soon enough to put out Iresines, Heliotropes, Begonias, Ageratums, Petunias, and other more delicate plants. Coleuses, Cannas, Acacias, Grevilleas, Abutilons, Centaureas, and the commoner Palms may be planted early in June; but the large-leaved Solanums, Wigandias, Ricinuses, Amaranthuses, and Tobacco are injured by a very slight frost, and ought, therefore, to be kept where they can be protected till the second week in June, and even later in cold districts. Dahlias are rather delicate, as also are the African and French Marigolds; while Stocks, Asters, Zinnias, Gaillardias, Godetias, Antirrhinums, Pentstemons, Cornflowers, and Sunflowers may well be planted as soon as strong enough to move.

Hints on Planting.—Each bed or border should, prior to being filled, be well forked over, and made fairly firm and level. If of a rather heavy nature it is unwise to bring any bad working soil to the surface, and it would be further improved by having plenty of good leaf soil forked in. The winter occupants of the beds, such as Forget-me-nots, Wallflowers, Silenes, Saponaria, and Limnanthes, were very late in flowering, and when cleared off they leave the ground in a dry and impoverished state. Such beds should have a dressing of either short manure or decayed garden refuse, and be well watered the evening before planting. This will be found a better plan than planting first and then watering. Verbenas, Violas, Begonias, Calceolarias, and Dahlias are all moisture-loving plants, and should, therefore, be given the coolest sites, and plenty of manure or vegetable matter in the soil. Zonal Pelargoniums, notably the doubles, Petunias, Marguerites, Antirrhinums, and Tropæolums, thrive and flower surprisingly well when planted in rather hot and dry positions, and the majority of the Zonal Pelargoniums flower most freely when growing in only moderately good soil. As a rule, it is the best plan to commence with the edging plants, finishing in the centre. Where places have to be left for the less hardy kinds, these should be duly lined out, and lines formed with the back of a rake, or any other means, are of great assistance to the novice in planting. Mixed beds, if well done, have a pleasing effect. If it is intended to peg plants down so as to form a flat even surface, the stiff-growing Pelargoniums and Calceolarias especially ought to be planted in a sloping direction, or otherwise they easily snap off.

Watering and Shading.—The roots and soil ought always to be in a moist state when placed in the ground, as it is a difficult matter to moisten them subsequently. The soil should be firmly pressed about them, and a gentle watering given. If the nights are warm sprinklings given in the evening are beneficial, but on no account should deluges of cold water be given nightly, these rendering the ground very cold. Should the weather keep clear and hot temporary shade prevents the loss of much moisture, and also helps plants that are not strongly rooted. Especially is shading necessary for the Sedums, Herniarias, Mentha, and Antennaria used for filling-in the groundwork of designs in carpet beds. These have to be pulled in pieces and thickly dibbled over the ground to be covered, and if this is unavoidably done in hot weather only shade and frequent waterings will insure even and quick growth.

Late-struck Cuttings.—If there is any likelihood of Iresines, Coleuses, and Alternantheras being scarce, it is not yet too late to strike a number of strong tops. Towards the end of May or the first week in June thousands of Alternanthera cuttings may be taken off the old plants and dibbled-in without any trimming about 2 inches apart in a frame over a very slight hotbed. Coleuses, Iresines, and soft Verbena tops may be similarly treated, and if kept close, shaded from bright sunshine, and duly watered all will strike root very quickly, and grow into useful plants by the middle of June. Small plants raised in this way are the best for carpet beds.

Seeds to be Sown.—If seeds of Carnations, Pinks, and Picotees are sown now in pans of fine soil, set in a handlight or frame, and properly shaded, they will soon germinate, and capital plants for the borders eventually result. It is necessary to raise a batch every year, especially of Carnations and Picotees, as seedlings invariably exhaust themselves in flowering the first season after they are raised. Campanula medium may yet be sown similarly to the Carnations, the plants resulting being suitable for either borders or pots. Campanula pyramidalis sown now will not grow to a flowering size under two seasons. Sweet Williams, both double and single, ought to be sown now, as well as Polyanthuses, Wallflowers, Stocks, and Myosotises in the open border. Sow also Sweet Peas for late flowering, and it is not yet too late to sow Poppies, Ornamental Grasses, Mignonette, Godetias, and other showy annuals.

THE BEE-KEEPER.

THE MANAGEMENT OF SWARMS.—No. 2.

The object of every bee-keeper who depends rather upon the production of honey than upon the sale of swarms for his profit is to get the newly hived swarm to work in surplus chambers with all possible speed. Swarms hived and treated in the manner pointed out in our last article will soon be ready to store honey in sections or other surplus chambers, but this is only to be expected in the case of strong swarms. Whatever else a bee-keeper may do, keeping the attainment of the greatest possible amount of surplus honey in view as the goal and object of all his manipulations, we

must once more emphatically warn him against taking measures to compel the bees to work in supers before they are really strong enough to do so, having regard to the fact that swarms of this year will form the stocks of next. A swarm may be forced into supers by contracting the brood nest, but the result of such an injudicious manipulation is that the queen has not sufficient cells to hold the eggs which she should deposit, and as a consequence there are not sufficient young bees hatching out from time to time to take the place of those which issued from the stock and formed the swarm when it was first hived. No brood chamber should ever consist of less than ten standard frames, and in many instances—in fact in almost every case, and under nearly all circumstances—a hive of double that size will in the end be more profitable.

We grant that if the old stock from which the newly hived swarm has issued has been confined to a small brood chamber, that the swarm will be comparatively small, and that therefore the bees will be less able to raise all the brood which they would have the power to rear if the swarm was of proper strength; but we maintain that to hive a swarm which has issued from a stock located in a hive of the capacity of fifteen or twenty standard frames in a brood chamber containing eight or ten frames of that size only, is a suicidal policy, and against the weight of reason. A swarm should be hived on never less than ten standard frames, and when the swarm is a large one such a confined brood chamber is far too small.

Early swarms hived in large hives give, in our experience, greater results than the same swarms hived in hives of small capacity. It may be that swarms hived in small brood boxes are ready to work in supers before swarms which have a larger space to occupy, but in the former case there are fewer bees to go to the fields, and fewer bees hatching out to take the place of those dying or getting lost than in the latter. With small swarms and with late swarms the same line of argument hardly applies, because in the one case it will be as much as a small swarm can do in the course of the honey season to occupy fully the space given to it; and in the other, because no sooner has a late swarm filled the space already given to it than the season is at an end, and consequently the constantly hatching bees will never have a chance of going to the fields and bringing in their loads of honey.

The moral to be drawn is clear. Large swarms hived in capacious hives are the most profitable. Small swarms are, for honey gathering in the current season, practically worthless, but are excellent for forming stocks for another year, while late swarms are neither valuable for honey gathering purposes nor for the purpose of forming another season's stocks, unless special attention is devoted to their management. By uniting small swarms and late swarms, and thus forming from say every two or three swarms one strong swarm, the evil may be partially remedied, but happy is the man who has early swarms from stocks in large hives. Bee-keepers cannot nowadays afford to expend as much time on the care of individual stocks as was the case when honey was saleable at high prices; the object must now be to produce the largest possible quantity at the smallest possible cost. In a question of profit and loss the bee-keeper must watch small matters in order to gain his end, and if there is one thing more important than another to a practical bee-keeper, it is to either prevent swarming altogether, or else to take measures to insure that his swarms shall be both early and strong in numbers, and headed by prolific queens, and not by worn-out dowagers who are compelled to lead off a swarm by the importunate demands of their children, who desire the population of the colony to increase at a greater rate than the powers of the queen enable her to give them the means of accomplishing.—Felix.

NOTES ON BEES.

On the 18th of May the day temperature had risen in a week's time to a mean of 50° Fahr. from one of 40° Fahr., and on the next day the temperature rose to 80°, culminating in a severe thunderstorm with heavy rain, and it continued thundering for twenty-four hours. Owing to the sudden but welcome rise in temperature the bees for the first time this year could venture out without being chilled, as they have been so much subjected to the entire spring throughout, and they took advantage of it, working in fine style for the first time, and enabled us to form a proper estimate of their forwardness. Some of them are in readiness for swarming, and we hear of many hives expected to swarm daily, which have received no feeding whatever; this is sufficient to warrant us in condemning the manipulating and meddling system.

Apropos of the question of introducing queens, I may state that before introducing a valuable queen I give the queenless bees a piece of comb containing eggs and larvæ. If the bees start queen or royal cells I give them the queen at once; if they refuse to raise royal cells I decline introducing her, as there is not only a risk but a great likelihood that the queen will be killed. In all cases of hives having young unfertilised queens, I provide them with a piece of comb containing eggs and larvæ, in case the queen may be lost during her wedding tour.

The simplest plan of doing so, and to see at a glance without opening the hive, is to put the comb containing the eggs inside a clear tumbler on the top of the hive over the centre of the cluster of bees.

Swarming will soon be general, and the eye should never be long absent from the bees, as owing to the nature of the year many hives will make an effort to raise queens which will swarm in spite of every care taken, and every system supposed to prevent it. The loss of a swarm means the entire loss of a honey harvest, and nothing said to prevent it or assurance that they will not swarm should cause the owner to relinquish watch over his favourites until the honey season is past, when young fertile queens should be given to every stock.—A Lanarkshire Bee-keeper.

TO CORRESPONDENTS

*** All correspondence should be directed either to "The Editor" or to "The Publisher." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Hyacinth Bulbs (*Spalding*).—We have received some Hyacinth bulbs, but no letter pertaining to them.

Insects in Peach House (*J. P.*).—The insects sent belong to the aphis tribe, a hand magnifier revealing the honey tubes, which may indeed be perceived by the naked eye, and which serve as a "bond of union" between ants and aphides. The particular species appears to be that called A. ulmaria, and occurs on various plants in and out of houses. It has been conjectured that in the winter months this and some other aphides that infest fruit trees retire to the low plants of fields or gardens which are green during the winter, and come back to the trees in spring. This suggests the application of some such preparation as the wash of soap and petroleum often recommended, which would render the branches distasteful to the aphides returning; also, they would doubtless be kept off or destroyed by tobacco water.

Profitable Use of Light soil (*A Thirty-years Reader*).—Flowers are grown in such abundance by expert cultivators and in private gardens that an inexperienced person could scarcely expect to compete successfully with them in the market supply, and you would perhaps do better by growing early Potatoes, Peas, Kidney Beans, Strawberries, Cos Lettuces, &c., taking cognizance of the markets, and growing those for which there is a demand and most likely to yield remunerative prices. The dryness of the soil may, to a great extent, be overcome by mulching; indeed it would be better to use the manure as a mulch than apply great quantities to the soil. Early flowers would be most likely to pay, and those you name would grow very well, but whether, having bulbs to purchase, you would find the culture profitable or not, is an open question. We neither advise you to make a change nor dissuade you from doing so.

Conserving Moisture in Soil (*W. R. R.*).—We have not a doubt you act rightly in keeping the surfaee of your light soil, on gravel, as loose and dry as possible for conserving moisture for your Roses, for an inch or two of dust is an excellent preventive of evaporation. But all the same, loosening the soil faeilitates the drying of the surface in spring, and often beneficially. It is the water "hanging about" the surfaee of land planted with winter Lettuees that causes the loss of many in the spring if relief is not afforded through hoeing the ground and ridding it of some of the moisture by evaporation ; that is often the chief object of the first hoeings, and subsequently as growth progresses heat increases, and more moisture is required by the plants, it is conserved for them by the dusty surface. But if you were to observe the men at work with their hoes you would find the portion immediately done early in the season damper than that to be done, and in an hour or two it dries on a fine day. The sun-warmed surfaee soil turned in and the eolder layer brought up to be warmed and dried in turn makes the plants grow at that season. Later on the moist soil below is not brought up in hoeing, beeause the moisture is then wanted in the earth for the crops. A loose surface is equally good for eonserving moisture in heavy soil in summer when it is wanted there, for if not loose the ground eracks and the moisture escapes through the fissures. We think you quite competent to discuss the whole matter, even with the author of the sentenee that is not quite in accord with your views, but have no wish to influenee you in the least in that direction.

Intermediate Stocks (*Aberystwith*).—As we gave you instruetions a short time ago on East Lothian Stoeks, we presume you now refer to the London Intermediate kind, whieh is quite different—quicker in growth and less hardy. Nowhere are these Stocks seen finer than in Covent Garden Market, where they are sold by thousands for the deeoration of metropolitan homes. The scarlet, or rather crimson, variety is the best. Sow very thinly in rieh light soil in the open garden at the end of July. If the soil of the garden is naturally heavy prepare a compost of light loam and very much deeayed manure or leaf soil in equal parts, and make a bed of this about 3 inches thiek in which to sow the seed. If the seed bed can be so formed as to be covered with handlights or other glass protectors so much the better, as if drenching rains occur when the seedlings are in a small state much injury may be done ; still the young plants must not be coddled, but should be encouraged to assume a sturdy habit of growth from the very beginning of their career. When they are large enough to be handled, and before they are in the slightest degree crowded in the seed beds, pot them singly in 3½-inch pots, place them in a frame and keep them elose for a week, and shaded if the weather is sunny, but the moment they ean endure the sun they enjoy it, also all the air possible, even to the extent of removing the lights entirely night and day during settled weather, and dwarf vigorous plants will be produced before winter. They must be wintered close to the glass in very light frames, and must have protection in severe weather. They will require little water during the dull days, yet must have sufficient to keep them in a fresh growing state, but decay of the foliage must be speeially guarded against. If very dwarf plants are required, they may remain in these pots until they produce flower buds, and the moment it ean be ascertained which will be double and whieh single, either shift the former into larger pots, using very rich turfy soil, or plant them out if the weather is favourable.

Young Vines (*J. E.*).—You are doing right in allowing the Vines to break steadily, but if you allow the night temperature to fall below 60° after the leaves eommence expanding neither Mrs. Pinee, White Tokay, nor the Muscat of Alexandria will ripen. When the fruit is set the temperature may be 5° higher, with the usual increase in the daytime from sun. The top lights should not be entirely elosed at night, and must be further opened as soon as the temperature rises in the morning. It should never be allowed to reach 80° or 90° before the sashes are opened, and then have to give air to reduee it, for that practiee is injurious ; so is a great and needless inrush of eold or dry air through doors or front ventilators. The maximum day temperature, with air, may be about 85°, as registered by a shaded thermometer, and this need not be exceeded with top ventilation alone, rightly eonducted, except in very hot weather indeed. A good deal of injury is done by reekless front ventilation in the early stages of growth, but during the ripening process the danger is lessened. A genial buoyant atmosphere should be maintained by damping the house proportionate with the increasing heat ; and when elosing early in the afternoon, or when the temperature will not exceed 90° afterwards, every part of the house should be heavily syringed, except when the Vines are flowering. Those in pots must be judiciously watered, always giving eopious supplies before the leaves droop, yet withholding water when the soil is wet. Top-dressing may be needed as the fruit swells. The weight of the erop must be governed by the strength of the Vines. If good and well managed they should bear 8 lbs. or 10 lbs. eaeh, though all do not do so. The permanent Vines, if the canes reach some distance up the roof, should be denuded of buds to near the base of the rafters, taking a leading growth from these, with one lateral, if the Vines are strong, from eaeh side below the origin of the leader, letting these side laterals grow 2 or 3 feet. The buds, if any, lower down the main stem in the house we should not rub off, but pinch the shoots at two or three leaves, these strengthening the stem. You may find many details in past and future eolumns of Work for the Week. Your ehief object should be to produee a strong leading cane by concentrating the resources of the Vine on few growths, while if you shorten the canes now they will bleed. The portion from which the buds are removed can be cut back in the autumn.

Fumigating—How not to do it (*N. S. R.*).—We print your letter as a warning in ease there should happen to be other readers who have overlooked what has been published time after time on the danger of burning sulphur in plant houses and vineries. We have seen Vines ruined by it, also Cueumbers and Melons, and now we record this wreck amongst plants. You ask our advice under the following eircumstances —"I have a span-roofed house eontaining a general colleetion of greenhouse plants, young stuff waiting to be bedded out, and two climbing Roses. Finding the latter troubled with green fly I elosed the lights and burnt two small sulphur pastiles, used for disinfecting sick rooms. The house was only shut up for a quarter of an hour, and I then gave everything a thorough syringing with clear water. The next morning the effects, I presume of the sulphur, appear disastrous, though the effect on different plants is very striking. Large and small plants of Heliotrope and Dahlias have turned nearly blaek, but do not droop. Young Asters, Geraniums, and the leaves of the Roses droop and look withered as if in want of water. Young Stoeks and Verbenas have become blaneheed. Mignonette, large plants just coming into bloom, have turned a red brown and withered as if they had finished blooming. Ferns seem all right, and Tomatoes slightly droop. A sickly smell pervades the house and all the plants. I have now the door and all lights wide open. Please tell me if I can do any more. I suppose these effects *are* from the sulphur. The only thing *not* affected is the green fly." Undoubtedly the disastrous effects are from the sulphur, and unless you are a very new reader of the Journal you have overlooked safe methods of destroying inseets and adopted a eourse that has been many times alluded to as positively dangerous. Some of the plants will be of no further use, others may be cut back more or less, according to the extent of the injury—the Roses and Pelargoniums, for instance ; then by syringing freely morning and evening, and maintaining a moist genial atmosphere by damping the floors and stages as they dry, giving water to the roots of the plants judieiously, and freely yet carefully ventilating, healthy growth may follow. Those intended for planting out may be stood in a shaded position outdoors till they show signs of reeovery from the injury they have sustained, and whieh might have been averted. Tobaeeo smoke will destroy aphides without injuring plants, and solutions of the advertised insecticides arc also safe and good for the purpose for which they are prepared.

Peach Trees Unsatisfactory (*J. H.*).—The leaves are very badly scorched. They have every appearanee of having been subjected whilst damp or wet to tobaeco smoke or fumes of an injurious character. As you state it is not caused by tobaeeo smoke, we can only conclude that the strueture has been kept much too elose and too moist, whieh in a dull period favoured the formation of thin foliage and soft long-jointed wood. Upon a return of bright weather and the consequently increased evaporation, the foliage would part with more moisture than the roots from their having such a depth (4 feet) of light porous material, would be able to maintain, and as a consequenee the tissues of the leaves would shrink, especially the edges and softer parts of the leaves most distant from the midrib and veins or sourees of supply. In that way only can the present appearanee of the leaves be accounted for, unless we assume that the seorehing is due to want of air in the early part of the day, the sun being allowed to act powerfully upon them whilst wet, not necessarily from syringing, but from the deposition of moisture through the night, and a large influx of air, rapid evaporation taking place, with the resulting scorehing. Though the scorching might have been lessened, if not prevented, by judicious treatment, nothing but a radieal change in the soil will cause the trees to make healthy and fruitful wood. The remedy is to lift the trees in autumn as soon as the leaves are showing the first indieations of ripening, doing it carefully, so as to preserve all the roots practieable, and particularly those near the stem, keeping them from the drying influenees of the atmosphere as much as possible. If you eannot obtain fresh soil mix about a fourth of elay marl with the present light soil, breaking it up small, and incorporating evenly with the soil to a depth of 2 feet. It would be an advantage if you could take out the soil to a depth of 3 feet, and put in a foot depth of old mortar rubbish from an old building, roughest at bottom and finest at top, and then the soil mixed as advised with the elayey marl, making it firm by treading, it being in sueh condition that it will not clog, yet having sufficient moisture to favour the spread of the roots. Lay the roots in the border so made, the uppermost not being more than 3 or 4 inehes from the surfaee, and the others disposed in layers with a similar thickness of soil between. Make the soil very firm, afford a good watering to settle it about the roots, and muleh as far as the roots extend with 2 or 3 inehes thiekness of short fresh stable manure, the straw being shaken out. If the weather be bright syringe and shade whilst the work is being done and for a few days afterwards. The trees will push fresh roots quickly, and they will set and stone the fruit in a satisfaetory manner next year.

Strawberries Failing (*J. M. G.*).—Yours is a misfortune rather than a fault, that has happened with many a good gardener. On some soils large-growing varieties, sueh as President, Sir Joseph Paxton, Eleanor, Dr. Hogg, British Queen, and others, "run out" or produce nothing but leaves, with the exeeption of a few small flowers. In our garden the first and second named, three-year-old plants, are practieally barren, while young plantations, one and two years old, are flowering abundantly. We visited a garden reeently, and every plant of President was barren, as was the ease last year ; runners from these have also failed, not one in a hundred showing, while others, planted at the same time, of Vicomtesse Hericart de Thury, obtained from a distance, were all flowering well. If you have not tried this Strawberry we advise you to do so, for it is

one of the most fruitful; it never fails with us, though others do occasionally. You will do well to obtain fresh runners of such varieties as you desire to grow for a new plantation, and before planting give the ground a good dressing of wood ashes, for your soil may be deficient in potash. Plant them on ground that has not been occupied with Strawberries at least for some years, say after early Potatoes have been cleared from the ground. Do not trench it, for the plants would do better on your soil without. If it has been liberally manured for the present crop, plant without the addition of fresh manure. If the ground is not fertile, spread a liberal dressing of manure on the surface, as if you were preparing for a crop of Potatoes, only forking the manure into the surface so that the roots of the Strawberry plants can quickly take possession of it. The autumn and winter rains will carry its virtues down as deeply as the roots descend. Good Strawberries are grown without mulching, and if manure on the surface is objectionable you should work on the two-year principle. To do this you would have to make a plantation every year, and destroy a corresponding number of rows as soon as the fruit is gathered. For this purpose you can place the plants closer together, say 18 inches from row to row, and 1 foot or 14 inches from plant to plant. The plants would cover the ground the second year, and bear heavily. As you want fruit as soon as possible, however, you may place the plants in the row only 9 inches apart, and after the crop is gathered the first year cut out every alternate plant for the others to develope and afford the principal crop. Vicomtesse Hericart de Thury and Sir Joseph Paxton are good and free varieties, Eleanor succeeding. Some of the best Kentish Strawberry growers have fruitless plants this year, through the heat and drought of last season checking growth at the proper time, the result being late, small, and immature crowns, especially where mulching was not resorted to.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*J. M.*).—All the specimens are inferior, not one having spores. No. 1 is,perhaps, Phlebodium aureum, but no one could be positive from such an imperfect scrap. 2, Resembles Cyrtomium falcatum, and 3, Pteris tremula. (*M. N. O.*).—1, Epimedium alpinum; 2, Cerasus Padus; 3, Exochorda grandiflora. (*J. M.*).—Polygala Chamæbuxus. (*Inquirer*).—1, Leptospermum bullatum; 2, Brachysema lanceolata. (*Senex*).—Specimens sent packed loosely in brown paper never arrive in a satisfactory condition for naming, and this is the case with yours. Send them in a tin box or carefully packed, and we will name them with pleasure. (*M. R.*).—1, Gentiana verna; 2, Gentiana acaulis; 3, Myosotis dissitiflora. (*E. M.*).—1, Pyrus Malus floribunda; 2, It is not easy to recognise a plant from a damaged leaf and a single petal, and we can only guess that your Geranium is pyrenaicum.

COVENT GARDEN MARKET.—MAY 30TH.

MARKET quiet owing to the holidays, with prices lower.

VEGETABLES.

	s.	d.		s.	d.		s.	d.		s.	d.
Artichokes, dozen	1	0	to	2	0	Lettuce, dozen	0	9	to	1	3
Asparagus, bundle	1	0		4	0	Mushrooms, punnet	0	6		1	0
Beans, Kidney, per lb.	1	6		0	0	Mustard and Cress, punt.	0	2		0	0
Beet, Red, dozen	1	0		2	0	Onions, bunch	0	3		0	0
Broccoli, bundle	0	0		0	0	Parsley, dozen bunches	2	0		3	0
Brussels Sprouts, ½ sieve	0	0		0	0	Parsnips, dozen	1	0		0	0
Cabbage, dozen	1	6		0	0	Potatoes, per cwt.	4	0		5	0
Capsicums, per 100	1	6		2	0	,, Kidney, per cwt.	4	0		0	0
Carrots, bunch	0	4		0	0	Rhubarb, bundle	0	2		0	0
Cauliflowers, dozen	3	0		4	0	Salsafy, bundle	1	0		1	6
Celery, bundle	1	6		2	0	Scorzonera, bundle	1	6		0	0
Coleworts, doz. bunches	2	0		4	0	Seakale, basket	0	9		1	0
Cucumbers, each	0	4		0	7	Shallots, per lb.	0	3		0	0
Endive, dozen	1	0		2	0	Spinach, bushel	1	6		2	0
Herbs, bunch	0	2		0	0	Tomatoes, per lb.	1	6		2	0
Leeks, bunch	0	3		0	4	Turnips, bunch	0	4		0	0

FRUIT.

	s.	d.		s.	d.		s.	d.		s.	d.
Apples, ½ sieve	2	6	to	4	6	Oranges, per 100	4	0	to	9	0
Nova Scotia and Canada barrel	10	0		18	0	Peaches, dozen	12	0		20	0
Cobs, 100 lbs.	45	0		0	0	Pears, dozen	0	0		0	0
Grapes, per lb.	2	6		5	0	St. Michael Pines, each	3	0		5	0
Lemons, case	10	0		15	0	Strawberries, per lb.	2	0		4	0

PLANTS IN POTS.

	s.	d.		s.	d.		s.	d.		s.	d.
Aralia Sieboldi, dozen	6	0	to	12	0	Fuchsia, dozen pots	6	0	to	12	0
Arbor vitæ (golden) dozen	12	0		24	0	Genista, per dozen	6	0		12	0
Arum Lilies, dozen	6	0		12	0	Heliotrope, dozen pots	6	0		9	0
Bedding out plants in variety, per dozen	1	0		2	6	Ivy Geranium	4	0		8	0
Cinerarias, dozen	0	0		0	0	Hydrangea, dozen	9	0		18	0
Colens, dozen	3	0		6	0	Lilies Valley, dozen	12	0		18	0
Cyclamen, dozen	12	0		18	0	Lilium Harrisii, doz. pots	30	0		42	0
Dentzia, per dozen	6	0		9	0	Lobelia, per dozen	4	0		6	0
Dracæna terminalis, doz.	30	0		60	0	Marguerite Daisy, dozen	9	0		12	0
,, viridis, dozen	12	0		24	0	Mignonette, per dozen	4	0		8	0
Erica, various, dozen	9	0		18	0	Musk, dozen pots	2	0		4	0
,, ventricosa	18	0		24	0	Myrtles, dozen	6	0		12	0
Euonymus, in var., dozen	6	0		18	0	Nasturtiums, per dozen	4	0		6	0
Evergreens, in var., dozen	6	0		24	0	Palms, in var., each	2	6		21	0
Ferns, in variety, dozen	4	0		18	0	Pelargoniums, dozen	6	0		18	0
Ficus elastica, each	1	6		7	0	,, scarlet, doz.	3	0		6	0
Foliage Plants, var., each	2	0		10	0	Spirea japonica, doz.	6	0		12	0
						Stocks, per dozen	3	0		6	0

CUT FLOWERS.

	s.	d.		s.	d.		s.	d.		s.	d.
Abutilons, 12 bunches	2	0	to	4	0	Mignonette, 12 bunches	3	0	to	6	0
Anemones 12 bunches	1	6		4	0	Narcissi, various, 12 bchs	2	0		4	0
Arum Lilies, 12 blooms	2	0		4	0	Pansies, 12 bchs	1	0		2	0
Azalea, 12 sprays	0	6		1	0	Pelargoniums, 12 trusses	0	6		1	0
Bouvardias, bunch	0	6		1	0	,, scarlet, 12 trusses	0	4		0	6
Camellias, 12 blooms	1	0		3	0	Polyanthus, 12 bchs	1	0		3	0
Carnations, 12 blooms	1	0		3	0	Ranunculus, doz. bunches	2	0		4	0
Cowslips, 12 bunches	0	6		1	0	Roses, Red, 12 blooms	1	6		4	0
Cyclamen, 12 blooms	0	4		0	6	,, (indoor), dozen	0	6		1	6
Daffodils, Double, 12 bchs	0	0		0	0	,, Tea, dozen	1	0		2	6
,, Single, 12 bchs	0	0		0	0	red, dozen (French)	0	0		0	0
Daisies, 12 bunches	2	0		4	0	,, yellow	2	0		4	0
Epiphyllum, 12 blooms	0	0		0	0	Spiræa, bunch	0	6		1	0
Eucharis, dozen	2	0		4	0	Stephanotis, 12 sprays	1	6		3	0
Gardenias, 12 blooms	1	6		4	0	Stocks, 12 bunches	1	6		4	0
Lapageria, coloured, 12 blooms	1	0		1	6	Tropæolum, 12 bunches	1	0		2	0
Lilium longiflorum, 12 blooms	2	0		4	0	Tuberoses, 12 blooms	0	6		1	0
Lily of the Valley, 12 sprays	0	6		1	0	Tulips, dozen blooms	0	2		0	4
Lily of the Valley, 12 bunches	3	0		6	0	Violets, 12 bunches	0	0		0	0
Margnerites, 12 bunches	2	0		6	0	,, (French), bunch	0	0		0	0
						,, (Parme), bunch	0	0		0	0
						Wallflowers, 12 bchs	2	0		4	0
						White Lilac, per bunch	0	4		0	6
						,, ,, French	3	0		5	0



THE COMPARATIVE VALUE OF MANURES.

For economy to have its right place among remedial measures for agricultural depression it must be sufficiently comprehensive to embrace every possible detail of farming. We must not only avoid waste in the ordinary sense of the term, but in all we do there must be strict economy of time, labour, money. To insure this there must be no speculative work in general farm practice; our end and aim must be clearly defined, and the means for the attainment of success be as simple, sure, and inexpensive as possible. It is true enough that exact precision is hardly possible in regard to the quantity of seed or fertilisers used in our work, but it may be approached sufficiently near to avoid waste, and so sensible have intelligent farmers become of this fact that increasing attention is given to the careful selection of manures. To them it is quite clear that the use of muck or farmyard manure for crops generally will eventually come to an end, because it has been proved to demonstration that we can impart fertility to the soil at much less expense by the use of chemical manures.

This fact has been brought before our readers so often that they certainly must by this time regard it as no new thing. But it is only by persistent effort that we can hope to drive the muck cart from the land, and to induce farmers to avoid the serious loss involved in the needless manufacture of farmyard manure. Change from an old-established custom is always slow, and in this particular matter it is especially so, because of the lamentable ignorance of the real value of chemical manures. No doubt dealer's mixtures are a hindrance here, owing to the poverty of results and the consequent losses which have gone on for so many years, and the only way to overcome this difficulty is to show what is being done by the use of pure manures specially adapted to the requirements of the crop for which they are used.

In the new number of the Journal of the Royal Agricultural Society of England we have a valuable contribution to this work in the article on "The Practical Value of Dung as Compared with Artificial Manures," by Mr. R. Vallentine of Burcott, Leighton Buzzard. "Dung," says he, "is merely what is added to the straw. If one waters 1 ton of straw, and does nothing else but let it lie about for a time, something like 4 tons of mere wet straw-dung may be obtained. The manurial value of a ton of straw is estimated at about 10s., therefore 4 tons of merely wetted straw is only worth 2s. 6d. a ton as dung. On the other hand, if a ton of straw be used as litter for twenty weeks for a fattening bullock, receiving about 17 lbs. per day of cake—say of cotton and linseed

cake—besides Clover, hay, and roots, the origiual ton of straw has most costly additions made to it. Is the manure worth the extra cost and additions? Most people would answer, No. As few farmers have either boxes or covered yards to preserve any kind of manure, what part of the original value of the manure in the food would remain after repeated washings? Just in proportion to the number and thoroughness of the washings we may suppose; and these are frequent enough in all ordinary seasons. Again, when dung does contain a good per-centage of nitrogen, it seldom shows such favourable results in the crops as artificial manures, containiug much less in quantity, but in a more readily available form.

"The cost of oilcake dung is apparently very great. The notion that the land will get richer is true; but will the ordiuary farmer who makes it get richer or poorer? Artificial manures have hitherto produced crops of both corn and roots fully better than dung. If dunging is partially or wholly left off the crops fall off. Then where is the permanency of dung? If artificial manures containing both phosphates and nitrogen are used it is known on the best possible authority—that of Sir John Lawes—that after more than forty years' trial neither does the soil get poorer nor the crops get worse. Further, dung may be applied in very large quantities to all kinds of crops, and although the soil becomes richer and richer the crops never increase in proportion, nor yet at all in fact, as the yield of corn on dunged land—dunged heavily for forty years—dees not increase.

"People who know least about artificial manures condemn them. Many say nitrate of soda is the great criminal charged with scourging, wearing out the land, and doing all the evil possible in every respect to the land. Can an authentic account be really obtained of any farm that has been really injured by the judicious use of artificials? What farmer who knows anything much about artificials would use nitrate of soda or ammonia salts year after year alone without phosphates? No one could continue to do so without loss.

"Cattle foods of various kinds no doubt contain the amouuts of manurial ingredients which chemists assign to them, and the loss by consumption may also be fairly enough estimated. For all this, in real practice, by making dung from dear food and applying it to the land, there is usually a considerable loss when the crops are produced. Duug does not act so quickly as artificials, a small per-centage only coming into immediate use. The residue of the dung left often assisting one crop is subjected to continual loss by the usual rainfall in winter, and this for the four or five years that elapse before the dung is again applied.

"In very wet seasons even dung produces no very visible effect on crops. The soluble ingredients of value may be washed away as soon as produced. Whatever theory there may be on the matter of loss, every farmer found that in the unusually wet season of 1879 the dunged crops appeared to suffer as much as where artificials were used. Nor were the crops much better after any kind of manuring than when nothing was applied. Practically, however, there is an enormous loss of manurial matter from dung before it reaches the field. Iu too mauy instances I have not the slightest doubt that much more than half of the most valuable ingredients of the dung are washed away and utterly lost, so far as least as the producer is concerned.

"My present system of farming is to aim at keeping up the manurial condition of the land, so that it may produce good crops at the smallest cost of manure. For years past my main reliance has been placed on artificial manures. Some dung is made aud some bought, but it is found to answer best, as a rule, to sell hay and straw and purchase manures. The land is barely second class, but for all this in suitable seasons the crops have certainly been better than the crops of those average farmers who mainly depend upon dung. Profits on an average over thirty-three years would be considered fairly good by most people. In parts of half a dozen fields no dung has been applied for about forty years. On the parts entirely manured by artificials the crops, save on one part of light sandy soil, are quite as good as on the parts dressed with dung. The yield of Wheat averaged fully four quarters over twenty years Every kind of crop, excepting the seeds, is annually manured with either nitrate of soda, dissolved bone superphosphate, mineral superphosphate, or a mixture of all. The land was never rich, nor is it rich now, as when any portions are left (as some are every year) without any manure, the yield of corn is a good deal under what is mauured."

The article contains much more valuable matter, and statistics are given in support of his facts and reasoning, but the quotations we give possess an especial degree of importance, tending as they do to support the views we have so frequently laid before our readers, and which we profitably embody in our own practice. Invaluable is the advice to keep the fertility of the soil fully sustained, and the outcome of forty years' practice goes to show that the soil is simply a medium for the conveyance of food to plants; be it our aim to see that such sustenance is given in due and timely measure.

WORK ON THE HOME FARM.

By the time this note is printed corn-hoeing will be finished, but as we write horse and hand hoes are still in full activity, and the weather is certainly most favourable for such work. Bright sunshiue and winds soon destroy the weeds, and our expenditure upon this important work is proportionately higher than usual. We believe in turning such seasonable opportunities to full account, for clean land may be rendered profitable, but foul land never can be under present prices. Men working horse hoes have had to be looked closely after, for a little inattention may cause the corn itself to be destroyed or buried beneath the soil. With due care, however, horse corn hoes are a great help in turning a spell of fine weather to full account. Mangolds are nicely visible along the rows. Weeds are coming plentifully among them too, so that hoeing will have to be done among them now, for we much object to leaving such work till weeds get strong hold of the soil. The growth of grass left for hay is so backward that there will be ample time to get the root crops weeded and the plant thinned before haymaking begins.

Much carting of hay and Wheat straw has been done as horses could be spar.d for it. With our large supplies of both these articles we are able to supply a variety of markets and private customers, some at a distance of twenty miles, such long journeys being done on a Saturday, so that the horses may have the benefit of Sunday's rest. The demand for both hay and straw has been so good that we could have disposed of much more than we had to spare, but the price of hay has not risen with the demand owing to the low price of imported Oats.

Rye over which sheep and lambs were folded is now in full growth again, and would be available for a second folding did we require it, but we do not. The Rye will be left now for harvest, and we have reason to expect a full crop of both corn and straw, for both which there is a ready sale. The folding upon uew permanent pasture is finished for the first time, and stone-picking is being done upon it now. The plant is strong and abundant, and we hope to see good progress made by next autumn. A piece of Rye Grass of last year's sowing on some heavy land is a full plant, but the application of a hundredweight per acre of nitrate of soda has not told as it ought, which is a clear indication of a want of drainage.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				
1888. May.	Barometer at 32° and Sea Level.	Hygrometer. Dry.	Hygrometer. Wet.	Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature. Max.	Shade Temperature. Min.	Radiation Temperature In sun.	Radiation Temperature On grass	Rain.
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 20	30.174	59 8	51.5	N.W.	54 4	68.6	47.1	125.5	43 4	—
Monday..... 21	30.437	62 2	53.4	N.E.	54 9	69 9	45 0	121.3	39.4	0.012
Tuesday 22	30 399	53.9	50.0	N.	55 3	61.8	44 6	106.2	37.1	—
Wednesday .. 23	30.3-2	61.2	51.4	N.E.	55 8	68.8	43 8	118.6	38.2	—
Thursday.... 24	30.373	52.7	49 3	N.E.	54 8	73.1	42.6	117.2	35.1	—
Friday 25	30.264	56.6	46.1	N.E.	55.7	65.5	43 8	112.2	44 8	—
Saturday 26	30.133	49.7	45.1	N.	55.1	56 2	42 9	83.6	37.2	—
	30.309	55.7	49 5		55.	66.3	44 3	112.1	38.7	0.012

REMARKS.

20th.—Fresh, and generally bright.
21st.—Bright pleasant day, with slight shower at 9 P.M.; moonlight night.
22nd.—Cloudy all day
23rd.—Almost cloudless throughout.
24th.—Cloudy till about 11 A.M., then bright and warm.
25th.—Fine and bright.
26th.—Overcast morning; fine afternoon and evening.
A fine week; temperature variable, but on the whole near the average.—G. J. SYMONS.

TULIP NOTES.

TULIPS have not been favoured with the most suitable weather this season, but the early bedding varieties proved much better than could have been expected, and produced some brilliant but brief displays in the metropolitan parks and public gardens, where they are now extensively planted every season. Hyacinths are employed for a few beds, but they are not nearly so popular for this purpose as the Tulips, which combine with rich, bright, or soft clear colours a more graceful form, and present a more pleasing general effect, either massed in beds of one variety each, or mixed. Both systems have their advocates, and good results can be obtained in either case by judicious planting if due attention be paid to the average height of the varieties, and contrasting or harmonising the colours. For situations where the beds can be seen from a distance the massing mode of planting is the more telling, but for closer inspection mixed beds afford an agreeable variety.

The most extensive display of early Tulips in London has been provided in Hyde Park, where the numerous large beds near Park Lane were almost exclusively devoted to these plants this season, and many thousands of bulbs of the best varieties have been there yielding some glowing colour effects. Though on a less elaborate scale, the beds at Kew in the long walk leading from the Wood Museum towards the Palm house have been excellent, and were amongst the most pleasing we have seen this year. Particularly fine was one bed planted with Proserpine margined by two rows of Queen Victoria, a useful pure white variety, about 2 inches shorter than Proserpine, thus giving a less formal outline than when the varieties are of similar height. An example of the flatness resulting from the latter mode of planting was noticed in a neighbouring bed to the preceding one, the variety Potter (rosy crimson) having a margin of the clear yellow Chrysolora, but though the colour effect was good, the varieties were so nearly the same height that they were not seen to such advantage. In another bed, L'Immaculé (white) was edged with La Précieuse, flamed with rose, very pretty; extremely handsome also was Duchesse de Parma with rich orange scarlet well-formed flowers, margined with two rows of Queen Victoria, forming one of the grandest beds in the garden.

All those named were oblong beds, but there was a bold crescent-shaped bed having the orange-tinted Thomas Moore for a centre, then rows of Potter and Chrysolora in that order for a margin, a capitally effective combination. Very simple but extremely telling also was a large circle of Tulipa elegans, which is about 15 inches high, with long tapering brilliant scarlet petals and a yellow centre, the bed having a neat margin of Euonymus radicans variegata. Several of the distinct Tulips regarded as species might be advantageously employed in a similar way, such as the tall yellow T. retroflexa, the dwarf white T. stellata, or the graceful equally dwarf yellow T. australis, the crimson and white T. suaveolens, the spreading T. sylvestris, or the very distinct T. Greigi. At the top of the walk mentioned is a narrow circular border surrounding a vase, and the "mixed method" there adopted was so charming that it merits a word or two of description. The edge was formed of red and white double Daisies alternately, then a band of purple Aubrietias, followed by Tulips Queen Victoria, Duchesse de Parma, and Proserpine not too closely placed, the centre being yellow Wallflowers, and the ground beneath was covered with Forget-me-nots and the white Arabis. Such a diversity of tints without any discordant results, and such a freedom of design, secured many admirers, for what one critical gardening friend unhesitatingly pronounced to be the best border of spring flowers he had seen.

The season has also been unfavourable to the later or florists' Tulips, and those who are looking forward to the annual gathering of the National Tulip Society in the Manchester Botanic Gardens next Saturday do not anticipate one of the best representative displays. Dwellers in the south whose gardening careers do not date back to the time when these Tulips were such general favourites have but little idea of their diversity and beauty. It is doubtful if one collection could be found round the metropolis now, and in the whole of the southern counties there are but few who still find space in their gardens for their old favourites. Even in the north cultivators are not by any means numerous, and the collections of Mr. S. Barlow and the Rev. F. D. Horner are probably unrivalled. Why Tulips have declined in popularity is not very clear, for their marvellous varied and richly coloured flowers, if only studied in the most cursory manner, cannot fail to awaken admiration and interest in the minds of any plant lover. Perhaps the short duration and somewhat tantalising uncertainty of the flowers in our equally uncertain climate may have had something to do with the neglect; but whatever be the cause many still hope to see a revival of public interest in such a fine group of plants.

Several years ago I had an opportunity of visiting the Manchester Tulip Show for the first time, and plunged immediately into all the mysteries of Bizarres, Byblœmens, Roses, and Breeders—which until then had been to me words that conveyed a very imperfect idea of the characters they represent. Fortunately the improvement of my neglected education was undertaken by an excellent tutor, the Rev. F. D. Horner, who, in a few brief lessons and demonstrations, quickly cleared away the difficulties. Perhaps if I repeat the substance of his instruction respecting the different types of Tulips it may help others who have not mastered the distinctions, though their titles are so familiar. First on the list is the class termed Bizarres, which comprise a series of varieties with flowers having a ground colour of yellow, marked with red, brown, or even black, and present a strange combination of tints comparable perhaps to some extent to the peculiar Spanish Irises in another family of plants. Next follow the Byblœmens which have a pure white ground colour marked with purple, lilac, mauve, and similar tints, ranging in the darkest almost to black. The third class comprises the Rose Tulips, also with a white ground colour upon which the rose, red, or scarlet markings in many shades show in fine relief. The first includes many grand varieties, but the last two contain those that would be considered most beautiful by the majority. Each of these is divided into two sections according to the form the markings take upon the petals of the flower. When its colour is confined to a narrow marginal band it is said to be "feathered;" when, however, it runs up the centre bursting out on each side and expanding towards the apex it is "flamed," and such flowers are usually feathered also. At exhibitions, therefore, classes are provided for feathered Bizarres, flamed Bizarres, feathered Byblœmens, and so on, making six divisions in all.

But another important and highly interesting class calls for consideration—namely, the "breeder" or "mother" Tulips, which have a remarkable history. When florists' Tulips are raised from seed four to six years elapse before flowers are produced, and then in a large majority of cases the flowers are all self-coloured, showing none of the peculiar and beautiful markings of the parents, though individuals can be found in every recognised Tulip tint, and the class to which they will be ultimately assigned, except in a few mixed cases, can commonly be determined by the ground and body colours respectively in accordance with the rules already mentioned. The "breeders" have to be grown until they "break," or "rectify" as it is termed, that assume the feathered or flamed characters as Bizarres, Byblœmens, or Roses, and this is a very interesting period

for the cultivator, as it appears there is no certainty when it will take place, or what form it will take. Offsets from "breeders" have been known to produce both flamed and feathered flowers, but when once the "rectification" has occurred the characters are fixed with extremely few exceptions, and all offsets produced are true to the parent that yielded them. There is something extremely strange in this alteration of character in seedlings after the lapse of perhaps six or eight years from the time the seed was sown, and so far the determining causes have not been ascertained, though change of soil has been thought to have an influence in the matter.

This peculiarity has a bearing, however, upon another subject, which is worth a few moments' consideration, though the ideas here stated must be regarded more as queries than any attempt to settle a difficult point. Many so-called wild Tulips have been introduced in recent years and received names as distinct species, probably from a botanical point of view upon adequate grounds, but I have seen several of these that possess a remarkably close resemblance to the "Breeder" Tulip of the florist. Has it ever occurred to those who collect and describe "wild" Tulips, that it is possible the phenomenon of "breaking" might also occur in a state of nature, and have the newly found species been sufficiently proved as fixed types? This was brought rather forcibly to mind recently by a comparison of some "Breeders" received from Holland with the Tulips at Kew, one of the latter named T. platystigma being exactly like one of the Dutch Breeder forms in all characters. The subject is well worth investigation, and is only one of numberless points which render Tulips such interesting garden plants.—RECORDER.

A CHAPTER ON WATERING.

I DO not intend dealing with increasing the water supply in cases where it is deficient. As to whether this can be done or not depends entirely on circumstances of which I have no knowledge, but as to the application of water in times of drought much may be said. It is not always where the water is most plentiful that the plants are best watered; indeed it is not a question of mere quantity, but the secret of successful watering lies in doing it well and at the proper time. It is almost impossible to make a mistake in watering a plant that has so many roots as to fill the soil and pot in which it is growing. If too much is given it will simply run through the pot and do no harm to the roots, but such plants suffer terribly from neglect in watering. It is ruin to Heaths, Azaleas, and other hardwooded plants, and all others suffer. One may be very careful in watering for a week or a month, but let them become dry once so much as to cause the foliage to fall, the evil is done, and all previous benefits from careful watering are lost. Amateurs, especially, who may water their plants in the morning before going to business, and not see them again until the next morning, should place saucers beneath every one of such plants, and fill them with water every morning, when all danger of their suffering will be obviated. In gardens where young men are daily employed to water the plants this plan may be superfluous, as no plant should suffer that is examined twice a day, but where hands are short in large gardens the saucer plan will save much labour.

Now we come to another class of plants—namely, those that have plenty of soil and root room but few roots, which very quickly test the ability of the attendant, as over-watering soon causes the soil to become boggy, and then the plants will fail. Many are killed or kept in permanent bad health from this cause, and I find it a most difficult matter to get young gardeners or amateurs to understand that a plant with few roots does not require so much water as those with abundance of roots. The system of general watering is a bad one—that is, going into a house and watering every plant, whether it is needed or not. This is often done in the morning under the impression that if some of the plants do not require water then they may do so before the day is over, but this indiscriminate watering will soon lead to many of them becoming unwell, and if I found a man acting thus he would not fail to be corrected. Sometimes soil appears dry on the surface when it is really damp beneath. Where there are any doubts watering should not be done by sight only. If each pot is rapped sharply with the knuckles those in which the soil is dry will give a hollow sound, while those in which the soil is sufficiently moist will have a dead sound. By giving a little attention to this it is astonishing how expert anyone may become at watering plants in pots.

One of the best methods of preventing plants in pots suffering from drought is to plunge them. In good plant-growing establishments plunging, both under glass and in the open air, is largely resorted to. It saves labour in watering, as plunged plants do not require water so often as those with the pots exposed to the sun and air, and while the pots may become so hot and dry in the latter case as to injure the roots which come in contact with them, this never occurs with plunged plants. As a rule we plunge all our Chrysanthemums. Last year for some reason we did not do so, and the result was the poorest we ever had. Few plants suffer more from having their pots exposed than Azaleas, but when plunged they may be kept healthy without any difficulty. It is not always possible to plunge pots in greenhouses and on shelves in houses, but if a board or some screen is put up to shade the pots from the sun it will prove a great advantage.

When once the soil becomes thoroughly dry no ordinary watering will rectify the mistake, as three or four applications of water will pass through the pot without wetting the soil in the centre. The only perfect mode of watering over-dry plants is to plunge the pots over the top in a bucket or tank of water, and allow them to remain there for an hour or more. The water then penetrates the whole of the soil, and there is no difficulty in watering them in the ordinary way afterwards. In syringing it is generally the foliage only that is moistened, but it is an excellent plan to syringe the pots once or twice a day in hot dry weather, as they absorb much of the moisture and are cool for the roots. The soil in pots that are syringed does not dry quickly.

In dealing with Vine, Peach, and other borders under glass surface dribblings must be rigidly avoided. Nothing short of a thorough soaking will prove beneficial, and where the drainage is good a copious supply must be given. We hear much of Peach flowers and fruits falling. In many cases it is caused by a too dry subsoil and nothing else. I never knew a Peach tree that was properly watered behave very badly. A panful or two of water is a delusion, but a deluge "sets them up" for the season. Some say "We will not water until we see how they are going on." This a mistake. By the time that fruit trees show, whether they want water or not, the mischief has been done, as a check will have been given from which they will not quite recover for that season. The better way is to judge by the state of the weather and the soil if they are likely to require water. Anticipate it, and apply water thoroughly before the condition of the tree indicates want. Strawberries will take any amount of water in May and June, but many of them do not receive any until the fruit begins ripening, then it is seen they are small, and all of a hurry water is applied; but it is labour in vain, as unless they are quite wet at the roots when the fruit is forming after attentions are useless.

Vegetables are sometimes watered, but it is generally applied with the object of "finishing them off," whereas if it were given to them during the early stages of their growth to make them develope the "finishing off" would follow as a natural certainty. We have watered Peas in flower, and also long before they came in bloom, and the latter invariably proved superior. This applies to all vegetables. Timely application is the secret of successful watering. All trees planted during the last twelve months will be apt to droop should warm dry weather occur, and their chances of existing will be greatly increased if they receive a thorough watering at the roots before they suffer. Grass seed sown during April or May, or turf placed down in the spring, would grow better and form a finer lawn if watered so as to prevent the drought checking the growth of the grass. Extensive lawns might not easily be watered, but small ones could readily be attended to, and it is always important that they should be in good order.—A KITCHEN GARDENER.

THE PEAR-GNAT OR MIDGES.

WE learn from the "Entomologist" that this tiny insect, the identification of which has presented some difficulty to naturalists, has been verified by Dr. Riley, the American State Entomologist. The species appears to have been first observed in Connecticut about seven years ago. Dr. Riley infers that it was imported from France with some Pear stocks. It has been known in England for a longer period, but owing to its occurring only sparsely, and confining itself to a few varieties of the Pear, little notice has been taken of its habits hitherto. Previous names being doubtful, Dr. Riley has now called the species Diplosis pyrivora. It is probably the same as that to which some naturalists gave the name of Cecidomyia nigra. That the insect is widely diffused is shown by Miss Ormerod's letter from a gentleman in Wales, who says, "I have sent some specimens of Marie Louise Pears, of which there was a splendid promise of a crop, but they are all attacked by grubs within. The same thing happened last year, causing the destruction of a crop, as well as in addition having destroyed a fine crop of Beurré Bachelier. I observe that the winter Pears have entirely escaped."

So far as the observations have proceeded, they prove that, though this midge visits several varieties of the Pear, its favourite food is the Marie Louise, a Pear known to cultivators for at least fifty years; brought from France or Belgium, and which may have been more or less infested by this insect ever since it has been grown in England. At present no complaints concerning it have reached entomologists from what are the great districts of the Pear, as in those counties where perry is made, or those where the fruit is grown for the London market. It is to be earnestly hoped the insect will not become abundant in our orchards, for its minute size renders it difficult to deal with. Under a magnifier we see it is furnished with long antennæ, the wings are dusky, and the body black and grey studded with yellow hairs. The grub or larva is whitish yellow, having a pink projection on the under side near the head, used for holding or grasping doubtless, it being minus legs, as is customary in the Dipterous or fly order.

Mr. R. H. Meade thus outlines the history of the species:—"Its eggs are laid by the females, which possess a long and slender oviduct, in the interior of the blossom buds of the Pear tree before they expand. They are said to deposit the eggs upon the anthers of the flowers, sometimes piercing through the unopened petals to reach them. The eggs soon hatch, and the little maggots bore into the core of the young Pear, where they quickly increase in size, and spread and eat in various directions. The vitality of the fruit is not destroyed at once, but it continues to grow, sometimes, however, becoming distorted and lumpy in shape. By the time these young Pears have become an inch or two long the larvæ will have attained their full growth, and the fruit has become partly rotten and disorganised in its interior. If now cut open the core will be found partly hollow, the fruit fissured in various directions, and surrounded by excrement and *débris*, from ten to thirty maggots may be seen. Next, the Pears fall off or crack, when the larvæ leave the fruit, which they seem especially inclined to do in wet weather, as the rain either makes the fruit crack or it penetrates into the fissures, and they spring to the ground, for they possess, like some others of the genus, the power of skipping or jumping. Having reached the earth they bury themselves and remain hidden until the following spring." Besides the removal of all infected Pears seen during the season of growth it might be well to ward off attack by the application of some liquor to the buds which would be distasteful to the flies.—J. R. S. C.

TABLE PLANTS.

Where large numbers of plants are needed for table or room decoration, and the pots are placed in vases, much may be done to improve their appearance by surfacing the soil with low-growing plants, which will form agreeable contrasts with the foliage of the larger plants. This applies to foliage plants only, which are more often grown in a light manner, as Crotons with a single stem, Aralias, and Dracænas. Flowering plants, as a rule, are more bushy in character, and generally so grown as to partially, if not wholly, hide the pots or vases in which they are placed. Beyond the improved appearance gained by using living plants to hide the soil in the pots, and frequently several inches of bare stems, much time is gained in changing them, as when properly grown all that is required is to simply place a fresh one in the vase instead of having to cover the soil with moss or Ivy leaves. In some places, near towns especially, fresh green moss cannot be had, and artificially coloured moss has then to be employed, which at its best is but a poor substitute for the real article. I propose to name those low-growing plants which I have found suitable for the purpose, the method adopted in their preparation, and a few examples by way of contrast. The advantage of some of the plants is that they are hardy, and many need only greenhouse treatment, so that several classes of cultivators can be accommodated.

Selaginella Kraussiana is the most useful of all. It forms a dense green covering, lasting a long time in perfection, is not particular as to temperature, and may be made to contrast with any kind of plant, as for instance, when it covers the soil in which Cocos Weddelliana is growing, by adding a few pieces of Panicum variegatum the effect is much improved. The spring is the best time to increase the stock by pulling it in small pieces, dibbling them into sandy soil placed in heat and shade—a vinery answers well. Tradescantia zebrina, Fittonia argyroneura and F. Verschaffelti are easily increased by inserting short cuttings in bottom heat in sandy soil. Pilea muscosa is well adapted for this purpose, being dwarf in habit, deep green when in growth and when in bud deep pink, changing to a greyish white when in bloom. Cuttings strike freely at any time. Ficus repens, where low drooping growth is required, is capital; Vitis heterophylla and Peperomia argyræa are also suitable plants, Sedums Lydium and glaucum are useful hardy plants suitable to associate with those requiring greenhouse temperature only, and Harrison's Musk is sometimes used for this purpose.

One month before the plants are required is soon enough to surface the soil if the plants are suitably prepared and placed in sufficiently thick for immediate effect; or should the plants need potting a few weeks earlier than this the surfacing may be put on at that time. Drooping plants, such as Panicum and Tradescantia, are placed around the pot. These droop over the sides of the vase when grown into form; by pinching out the points a thicker growth is obtained. Those of upright growth should be placed in the centre. An example of arrangement in this form may be, for instance, red-leaved Croton with a base of Selaginella and Panicum, Tradescantia, or white Fittonia, while yellow-leaved Crotons may have red Fittonia, Pilea, and Panicum. After planting shade should be given for a few days.—E. M.

NOTES ON EARLY ENGLISH HORTICULTURE.

(*Continued from page 336.*)

The Romans are often spoken of as an iron race, a people hardy and fierce, but during their later history their love of gardening brings out their character in a milder phase. We do not, perhaps, allow sufficiently for their influence upon English horticulture, when we look at the unsettled and warlike times which followed, for long centuries, the Roman occupancy. It is true that the gardens attached to their town and country villas fell into neglect, still we may trace a descent of horticultural traditions from the Romans to the monks, in whose gardens flowers bloomed and fruits and vegetables were reared when other pursuits occupied all the attention of nobles and citizens. And moreover, of the large number of plants introduced by the Romans only a part became extinct; others propagated and gradually spread themselves, so as to make it a doubtful point with many species whether they are true natives or early introductions. People show us even now, for instance, a Plum growing apparently wild in Stone Wood, Kent, which is presumed to have been planted by one of the Roman residents in the town which grew up at the extremity of the valley below Southfleet, and on the border of the ancient road from Dover to London and the north—viz., Watling Street.

Still we discover, or surmise, that some species, once thought to be foreign, are really of English descent. Thus the Yew, which for centuries writers referred to as an imported tree, has of late been found in such abundance amongst other trees of forests long submerged, that we are assured it grew here when Cæsar landed, and before. That bald-headed and vain-glorious general was a successful soldier, but not always a good observer. He thought the Beech or Fagus did not occur in Britain because he did not find it along the line of his march, unless by Fagus he meant the Sweet Chestnut, which is not a plausible explanation. But the Abies which Cæsar also said he missed was not the Scotch Pine, sometimes erroneously called a Fir, but the Silver Fir, certainly not British. If afterwards brought in by the Romans, it died out later on, for it was not known to horticulturists of the Middle Ages.

Although we possess a meagre fragmentary account of Roman everyday life in Britain while the island owned the supremacy of that empire, we can picture to ourselves what the gardens of the resident gentlemen were by the accounts we have of Italian villas, which would be doubtless imitated on English shores as nearly as possible. Being conquerors of the world the Romans acquired a knowledge of trees growing in Europe, Asia, and Africa, but on the whole they were most indebted to Persia and Greece. Few things are new under the sun, and on a survey of the Roman gardens lying round London—let us say about the third century—we should see the two styles described in modern works on gardens—viz., natural and artificial. That the Romans took the hint of the irregular or natural one (in fact our Laureate's "careless ordered garden") from the pleasure grounds or paradise of Eastern kings seems likely. And the delineation of garden spaces or courts on some of the ancient Egyptian monuments by their formality suggest that the formal manner of laying out originated in that land, but the Romans probably learnt it from the Greeks. We should perceive that the larger gardens, as might be expected, were chiefly laid out in the natural mode, and the smaller in an artificial or geometric fashion. If of any extent, the gardens were always well shaded with lines of trees, and shrubberies or clumps interspersed. Seats were numerous, and the Romans added the additional luxury of low couches, so that persons could lie if they chose without the risk of resting upon the ground. As a rule they liked to introduce water, preferring to a pond or lake some streamlet, so contrived that its turns and changes of level made it flow with a murmuring sound

agreeable to the ear. A favourite practical joke, however, was to have a concealed fountain, and as the by-passer went along, by stepping on a lever he set it in motion, unawares, perhaps to receive its stream upon his person. It was very usual to place plants in pots or in boxes along the sides of garden paths. It may be inferred that these were removed for the winter, especially in our colder climate, and protected by some means. One favourite style of setting out gardens was in squares, four, eight, or even more, each square separated from its neighbours by trelliswork, upon which climbers or creepers were placed. On the outside of gardens there were often hedges of some thorny species. It is supposed the Romans occasionally formed those of the Broom (Cytisus scoparius).

I think it is quite possible we might learn, even now, from the Roman lords of Britain, as did our ancestors, for there rose up a class amongst the Britons who copied Roman ways and methods, in gardens amongst other things. The Roman horticulturists thought it of importance to study not only the senses of sight and touch, but that of smell, when planning gardens or shrubberies. As a matter of course they excluded all species, even if beautiful, when the odour of leaves or flowers was offensive, and they made a study of the various aromas given off by fragrant plants and trees, taking care to place together such as would assimilate. Certainly they would have much admired the Eucalyptus tree and other exotics we possess, but unknown to them; they, however, much encouraged the Pine, on account of its refreshing odour, and the Cedar, deemed a health-giving tree. The Bay was a favourite because of its beauty and its use in furnishing crowns of honour. The Eastern Plane, popular with us, was also popular with the Romans, but we cannot see clearly why they had a partiality for the Cypress. Even, as in later times, certain plants came to be dedicated to particular individuals—the Violet, for instance, to Napoleon, and the Primrose to Beaconsfield—so the Romans assigned trees to imaginary personages; thus the Olive to the Queen of Wisdom, the Poplar to Hercules, and the Myrtle to Venus. Very probably they planted in the groves about their English villas both the trees of the warmer countries of South Europe or Asia, and species obtained from northern regions colder than Britain.

The fanciful mode of cutting trees or shrubs into imitations of the shapes of human beings and animals, or forming letters of names from them, was an old device of the Romans, though reintroduced to us by the Dutch after William III. became monarch of these islands. In forming vineyards or Vine plantations the Romans made an artificial slope, if they had not a natural hill available, and it was a notion of theirs to have the ground above the Vines set with low shrubs, growing thickly. One of their fads was to plant the walks around some of the gardens with a plant they call Acanthus, presumed to be a species of moss, but we do not know; of course it was kept short and even, being soft to the tread, silent also, but probably at times slippery. The practice of forcing plants was introduced to Britain by the Romans; this they managed on an original plan by means of *specularia—i e.*, plates of talc, with which they covered boxes or baskets, also using manure to heat; for they were well aware of the importance of manuring or enriching the soil, and even with this object sowed crops and then buried them while green. But as to their *specularia* it remains a wonder how they got talc plates of 4 or 5 feet long (so it is asserted), for none such can be split now. Though some have argued, from the Roman custom of warming dwelling houses by subterranean stoves, that in a similar way they probably applied heat to houses containing vegetables and fruit, the silence on this point of all writers on gardening and rural affairs leads rather to the negative conclusion. They understood grafting and inoculation, layering also, but frequently propagated fruit trees by seeds or suckers; and the Romans had their florists, too. Some in London doubtless, if not at other British stations, would ply their trade, which was to sell chaplets or wreaths made up both of wild and garden flowers. These were used for various purposes, the flowers in them being chosen not only for their beauty and perfume, but arranged to represent symbolical or mythological ideas.—J. R. S. C.

IVY-LEAF PELARGONIUMS.

Ivy-leaved Pelargoniums are becoming very popular, and we cannot feel surprised, for they are of easy culture, and can be trained to almost any shape, pyramidal plants being very ornamental. They are also quite as useful to cover spaces on walls or pillars in the greenhouse or conservatory, and afford abundance of flowers for a long time. The semi-doubles are especially to be recommended for the latter purpose. In one of the Pelargonium houses at Chilwell these may be seen to perfection trained up pillars on each side of the pathway, so as to form arches over the pathway. These arches are from 8 to 10 feet apart, and form a very interesting feature, being at the present time covered with flowers.

Amongst the most notable varieties may be mentioned Anna Pfitzer, Comte de Choiseul, Emile Lemoine, Furstin Josephine von Hohenzollern, Jeanne d'Arc, Le Printemps, Louis Thibaut, Madeline Reiterhart, and L'Elegante, the old variegated form, a mass of flowers. This variety is also much prized for bedding. Many others may be mentioned, which appear mostly to be closer growing, more fit for specimens or for bedding, such as A. Carrière, Congo, Isidore Feral, M. de Borringe, Madame Thibaut, and Souvenir de Charles Turner, which are flowering from nearly every joint. Of newer varieties, notable are Galilee, a charming pink double, and Lavosier, a very fine type of the rose-coloured section; this is also a double variety. Many others could be mentioned, but the above are sufficient to form an idea of what are good. In another house may be seen the old, but yet useful, Solanum jasminoides, trained as mentioned above, and it has a charming appearance, producing its pretty white clusters of flowers in profusion. This is very useful for wreaths.—S.

HARDY PLANTS AT WISLEY.

A slight acquaintance with poor collections, indifferently grown, has induced some individuals to indulge in a general condemnation of hardy plants, and to stigmatise them as "weedy;" but however this may be deserved in particular instances, it is unquestionably an error very easily dissipated by the inspection of such a garden as Mr. G. F. Wilson's. The best of plants amply repay for good cultivation, and some that under less watchful care seem scarcely worth the space they occupy are greatly improved with suitable attention. Successful culture with many of the choicer hardy herbaceous and alpine plants means finding them the right soil and situation, and then leaving them to take natural possession of it, merely protecting them from their enemies and preventing stronger coarse plants encroaching upon them. It is a common mistake when a plant is seen to be thriving to instantly start cutting and dividing it, and many choice occupants of borders and rockeries have been lost by this species of greed. It is always well to strengthen one's resources, but in this, as in other matters, "hasten slowly" is a good motto. One enthusiastic amateur always recommended his friends (and I believe consistently practised it himself) to distribute portions of any rare or difficult plant with which they had succeeded, as in case any accident befel the original plant there would always be a reserve to fall back upon, as it was unlikely that all would be lost. This also is an idea worth remembering, but if it is carried out too hurriedly or injudiciously it will simply bring the result that it is wished to avoid—namely, the destruction of the parent. There are certain to be many losses and failures before the right conditions are ascertained, but when once the plants are established they seem fully capable of taking care of themselves, and one of the charms of the garden at Wisley is the number of its occupants that are seen to be prospering as they might do in a wild state under the most favourable of natural conditions.

A few instances of this may be given in the following notes. Of Irises a great favourite is I. Kæmpferi with its varieties, so distinct in the shades of its large Clematis-like flowers. This thrives in several different aspects, but on sloping sandy banks near the water, and though the plants are at different elevations, from quite close to the water's edge up to several feet, yet in all cases the requisite condition seems to be that their roots should be cool, with a constant moisture rising from below. In the Cambridge Botanic Gardens, where this fine Iris also succeeds, it has a similar position, but it is seldom seen luxuriating as it does at Wisley. The Japanese Iris is, of course, not yet in flower, but another beautiful species that thrives well on banks near the water is I. longipetala, of which there are some handsome clumps now bearing abundance of its delicate lilac-veined flowers. The dwarf early Irises have also afforded plenty of their deep purple or parti-coloured flowers in compact clusters, though now past their best.

Two comparatively diminutive plants deserve a special note, as they are rarely seen happy in gardens, and though both are natives of this country they cannot be despised except by those who think that all floral beauty is confined to exotics. One of these is the Chickweed Winter Green, or, as it is more euphoniously named, the Star Flower, Trientalis europæa, which, amongst its bronzy green leaves, bears numbers of pure white small starry flowers. It is growing capitally in a somewhat damp position in "poor hungry peat," and is evidently thoroughly at home. The other is the Mountain Avens, Dryas octopetala, one of the smaller members of the Rose family, and which grows vigorously, and bears its white flowers freely on a bank in the garden with the golden North American species, D. Drummondi, though the latter has not made quite such good progress. Other trailing plants that succeed admirably in the woodland garden are the interesting little Linnæa borealis in two varieties, Mitchella repens, and Epigæa repens, which scramble about covering the ground with a dense carpet of greenery. With them are associated hardy Heaths by hundreds, Ledums, and similar plants that like a peaty soil and shade. The Heaths are treated in the same manner as some of the softwooded Ericas grown for indoor decoration—namely, they are cut in closely with the shears about this time of year, and then make strong fresh growth, also keeping them within moderate limits.

Several mounds are devoted to Saxifragas, Sempervivums, and

Sedums, of which good selections of the most distinct are grown, and as a preservative of moisture and to afford protection to the plants stones are freely employed around the plants on the banks, and evidently with beneficial effects. One mound of Verbaseum phœniceum is now very beautiful, the plants 3 or 4 feet high, with graceful spires of flowers half their height. The variety is one with flowers of a peculiarly rich purple hue, and established upon the tops and slopes of the mound the plants shed their seeds and a constant succession of seedlings is thus secured.

Still keeping to the woodland, Scilla nutans and its varieties were flowering beautifully at the time of my visit, and greatly prized are the varieties received from the late Miss Hope of Wardie Lodge. These are pure white, blush, pink, bright rose, and blue, all with fine spikes and bells, a delightful contrast of tints. Lilies of the Valley are found thriving in several shady situations, and they will be greatly extended. Ferns also are at home, particularly in one retreat, which, while shaded from sun at mid-day, yet admits some broken rays early in the day, and there the Holly, the Oak, and the Parsley Ferns are most luxuriant, while a graceful New Zealand Fern, Hypolepis millefolium, introduced some years ago, has taken possession of the ground, and is spreading like Bracken. Along the margins of the dells and rivulets, and wherever a fresh cutting is made in the soil, the common Blechnum spicant springs up in abundance, forming a pretty fringe to the banks.

In the open again, the lake has already been incidentally mentioned together with that charming little Cape of Good Hope aquatic Aponogeton distachyon, or Water Hawthorn as it is so fittingly designated in popular language. This has taken full possession of the lake and covers its surface with its pale green leaves and white fragrant flowers, being perfectly hardy, a fact that is not sufficiently realised, as there are many similarly sheltered situations where it would be equally satisfactory. Some years ago I remember making its acquaintance in Mr. Parker's nursery at Tooting, where in small watercourses, that were little more than ditches, it had become established, and year by year increased rapidly and flowered as freely. At Merton also, near the river Wandle, a piece of water is filled with the plant equally as vigorous, floriferous and uninjured. Water Lilies of various kinds are included in the Wisley lake, while its margin is clothed with a selection of the most effective of water-loving plants, a variegated Carex showing up well in contrast with the prevailing green tints.

The shrubbery, in addition to those noted last week, contains numerous fine plants of Rubus odoratus, R. nootkaensis, and the handsome white R. deliciosus. The last is of smaller growth than the others but seldom seen flowering so well, though they have been successful with it at Kew and Regent's Park, but Messrs. C. Lee & Sons exhibited specimens a few years ago at South Kensington in fine condition from a plant in the private garden of one of the members of the firm at Hounslow. Upon the higher ground near the Lily beds is a row of seedling plants of Chimonanthus fragrans which are fast developing into a little hedge, and possess considerable interest. Mr. Wilson says that when visiting Dangstein some years ago in the company of Dr. R. Hogg and the Rev. M. J. Berkeley, a plant of Chimonanthus was noticed that was bearing a quantity of seed, which at once attracted attention, as it had been declared by scientific authority that seeds could not be formed without the fertilisation was assisted by insects, and the early period at which the flowers are produced rendered it very improbable that such assistance could be afforded. However, the seeds proved fertile, as both Dr. Hogg and Mr. Wilson succeeded in raising plants, and, as already remarked, the latter now has a long row of healthy specimens. The increase of the Chimonanthus has always been a subject of interest, and there is a well-worn story to the effect that Dr. Lindley once offered a guinea for every plant that was raised from a cutting, but the prize was never claimed. Mr. F. Bause, when propagating in the Chiswick Gardens, however, succeeded in accomplishing this so far as the formation of roots is concerned, but I believe that they never grew and ultimately died. Some time ago it was claimed that plants had been raised by means of cuttings taken when the leaves were fully developed well rooted in a vinery, and an experienced friend assures me he has succeeded in a similar way.

Roses are favourites at Wisley, not formal standards or bushes, to afford exhibition blooms, but all climbers and trailing Roses that cover walls or hedges with growth and flowers. Two sides of the cottage facing full east and north are clothed with plants of Rêve d'Or, which are promising a delightful display of flowers. The golden bronze William Allen Richardson is planted to cover hedges and trellises, while the fresh green foliage and large red and white flowers of R. rugosa succeeded by plentiful crops of fine fruits make superb hedges. For a similar purpose the American Blackberries are extensively employed, and plentiful gatherings of fine fruits are obtained during the season.

Such in brief are some of the characters and features of Wisley, imperfectly pourtrayed, but an hour or two spent amidst such a diversity of interesting objects admits of little more than generalisation.—L. C.

APRICOT BRANCHES DYING.

In an article on Apricots on page 434, it is stated that old trees are constantly losing branches as well as numerous spurs on the live wood. This can be prevented in a very simple way—namely, by leaving the ground undug, and weeded only by hand for 3 feet from the stem of the tree. As sure as the roots are injured by the fork or spade so sure is a branch or spur to suffer in consequence. If in the height of summer the ground near a tree is dug and a strong root cut off, in a few days a branch perhaps laden with half-ripened fruit will wither and die, or if the small fibrous roots near the surface are damaged, the spurs will die just in proportion to the mischief done to the roots. Instead of bringing on young trees to take the place of the old ones, I advise your readers to avoid injuring the roots of the old trees, but protect and manure them well, and thus insure a constant large crop of any and all wall fruit.—Y. Z.

HABERLEA RHODOPENSIS.

At the meeting of the Royal Horticultural Society, on May 22nd last, a plant of Haberlea rhodopensis was exhibited from the Royal Gardens, Kew, and a first-class certificate was awarded, as, though by no means a novelty, it is seldom seen. It is dwarf, resembling a Ramondia in habit, but with somewhat funnel-shaped flowers, 1 inch long, like a small Streptocarpus, the tube purple, and five white lobes.



Fig. 62.—Haberlea rhodopensis.

They are borne in trusses of three or four flowers each, arising from amongst the foliage. Haberlea rhodopensis is a native of Macedonia, and is closely related to the two genera mentioned above. In Decandolle's "Prodromus" it is placed in the family Cyrtandraceæ, between Ramondia and Conandron, both monotypic genera, R. pyrenaica and C. ramondioides being well-known garden plants.

GREENHOUSE RHODODENDRONS.

I am not surprised that some of your readers should have recently inquired about these. In my opinion they are amongst the finest of all greenhouse plants. Some also possess a delightful fragrance like Rhododendron fragrantissimum. I was telling a friend the other day what grand flowers they were. His reply was, "I know, but I have no room to grow them." Now this seems to be the impression of many who own comparatively small greenhouses and conservatories, and it is a mistake. They do not require any more space than Azaleas and ordinary greenhouse plants.

Of late we have had some plants of R. fragrantissimum masses of flowers. These are in 9-inch pots, and the plants are not more than

3 feet high and about the same in diameter. They flowered with the greatest freedom when not more than half this size. R. Countess of Haddington is more compact still, and if anything more profuse in flowering, but the flowers droop more, and are not so fragrant. It is, however, a grand variety. R. balsaminæflorum album is one of the best of the new varieties, but it is rather expensive as yet. In the general class I can speak most favourable of R. Duchess of Teck, R. javanicum, R. Maiden's Blush, R. Scarlet Crown, R. Countess of Dalhousie, R. Lady Fitzwilliam, R. Princess Alice, and R. Veitchianum.

Anyone beginning with two, three, or half a dozen plants will soon add more to their collection, and their culture is easily mastered. The proper time for them to make their growth is immediately after they have flowered. New shoots will appear then, and ought to be encouraged. If the soil is not in good condition at the roots turn them out and repot. If they require a larger sized pot let them have it, but being a little root-bound induces them to flower more freely. Fine plants may be grown in 10-inch pots. They grow well in a soil consisting of three parts peat, one of loam, and a liberal dash of silver sand. The drainage must be perfect, and placed in so that it may remain of use for two or three years, as this is often enough to repot them. Repotted or not, they may be placed in a warm house or pit until they make their growth, and during that time syringe them daily. As soon as the growths are well developed remove them from their hot quarters, and gradually harden them until by July or August they may be placed in the open air. There they may remain until the autumn, when they can be placed in a frame or house, well watered at the roots, and frequently syringed to keep the foliage clean. When frost comes protect them, but do not attempt to keep them in a strong heat.—J. MUIR, *Margam*.

GLADIOLI NOTES.

I TAKE an opportunity to write a few more notes. Mr. Kelway finds the Gladiolus almost as easy of culture as the Narcissus and Snowdrop. I have no doubt that is so under conditions which suit it. But were Mr. Kelway located 5° further to the north, and instead of soft western breezes he had to put up with dry easterly winds for weeks together, he would find the Gladiolus not amongst the most easily managed of bulbous plants. However, Mr. Kelway hardly does the Snowdrop justice when he concludes the second paragraph of the article on page 402 with the remark (referring to the Gladiolus) that "After all, without care and skilful knowledge failures are certain." Surely there is not much care or skilful knowledge required to grow the simple flowers he names. They make themselves at home here along with Tulips, Scillas, and other bulbs, and are cut down with the scythe after flowering, and fail neither to increase nor flower under such rough treatment. Facts do not bear out Mr. Kelway's theory taking the country in general. Taking writers in this Journal, "D., *Deal*," has been troubled about the Gladiolus for many years. "A Northern Amateur," who is a most skilful grower, plainly says there are some which he cannot keep. Out of a large number of varieties of Mr. Kelway's raising which I bought eight years ago I have only one left. Some have increased here in the course of a dozen or so years a hundred fold. What is the reason for the difference? "D., *Deal*," considers disease the sole root of the mischief, but although I lose a few with disease that is not the reason. Mr. Kelway says, and has said so for many years, that "exhaustion" is the cause. That is to say, as I take it, that flowering the plant has exhausted the energies of the young corm. But the fatal objection to that theory is that the varieties which disappear are not those which flower freely and early in the season, but those which in cold seasons have no opportunity of flowering on account of winter overtaking them before that stage is reached. If my experience in the north teaches anything, it goes in the line of showing that many of our seasons are too short to enable the later varieties to be grown, unless some method of lengthening the season of growth is followed. I believe starting the corms under glass will prove the best way of doing this, and I hope another season to again try Duchess of Edinburgh under such conditions. I have just been dibbling out little plants from spawn which were started in boxes. Mr. Kelway, and doubtless many others, find these do well enough in shallow drills out of doors, but they do not succeed well here in that way. So far Gladiolus are looking very well, not quite so strong as last season, but if we only had a few genial showers instead of hard drying winds the strength would soon be increased.

I am sorry if I incautiously misrepresented Messrs. Kelway's position as exhibitors. I was under the belief that the firm I named had beaten them at London a dozen years ago. Certainly the spikes as seen at home were splendid, and the papers gave no stinted praise to their excellence, but, though under the impression that they had Messrs. Kelway as antagonists, I may, of course, be wrong.

Just a few words as to varieties. Tastes differ so much, especially when any standard is set up to test by, that what "D., *Deal*," condemns others would at once select as fine. I always find, whether in Gladiolus, Carnations, or Auriculas, and perhaps less so in other flowers, that the untutored eye selects that which the florist considers poor. A florist looks at a flower as it is, and as it should be from his point of view, and the nearer it approaches his ideal, apart altogether from its intrinsic merit, the better pleased is he. Ordinary people, of whom the world is composed, see simply the flower as it is, and are delighted with its colour, its form, its odour, without needing to look any further as to whether it may be offending against the law of the florist. Just so with some of the Gladiolus, which I like altogether apart from their properties as florist flowers. Diamant, though flimsy as a piece of tissue paper, is nevertheless a lovely flower. Le Phare is a most brilliant colour. Penelope I also like for its colour; and to sum up, I must confess to more than a weakness for the old gandavensis itself.—B.



ORCHIDS AT CROYDON LODGE.

A GRAND variety of Cattleya Mossiæ is now in bloom at Croydon Lodge. The plant has fifteen flowers, the sepals and petals are very pale, the lip is of great size and richly coloured with a pure white margin. Of Dendrobium densiflorum there are some fine specimens; one plant is 4 feet across, bearing three dozen spikes of bloom. D. thyrsiflorum, similar in habit to the above, is also well flowered in 32's; the best, a large form, has six spikes with about sixty blooms each. The flowering house is attractive at the present time with these and many other Orchids. Another cool house has recently been erected against a wall having a north-west aspect. On the front stage Masdevallias and Odontoglossums are growing, and the back wall is artistically made to represent a rockery from the roof to the ground. Pockets have been made in it for the reception of Ferns and Orchids; a few of the latter have been planted and some are in bloom, and no doubt when well furnished it will be a most interesting place.

The Phalænopses are grown in the plant stove. They are few in number, but the plants are large, and one piece of P. Schilleriana is said to be the largest in the country. They are in baskets, and the rule observed here is to water them from the spout of the can, and syringe the long roots occasionally, a system to be recommended where it can be carried out without interfering with plants beneath. Epidendrum bicornutum has been in bloom for a long time. It is grown successfully near the glass in the stove, and while growing syringed every day along with the Crotons, &c., but while at rest it receives no water. Peristeria elata in the same house is well grown; one plant is in a 14-inch pot, and has enormous pseudobulbs and four strong growths; they all flower annually, sending up thick spikes. The collection belongs to Stephenson Clarke, Esq., and the compost used by his gardener, Mr. Carr, is good yellow fibrous loam with a little peat and moss, and charcoal is used very liberally.

CATTLEYA SKINNERI AT ELMER'S END, BECKENHAM.

Mr. Goddard's plants have again been a magnificent sight. When I saw them a fortnight since they were arranged in a high lean-to house 24 feet long by 15 feet wide, forming an immense bank of rose purple coloured blossoms. There were over a hundred spikes averaging nine blooms each. A few Ferns and foliage plants were tastefully arranged amongst them and along the front. Racemes of Oncidium ampliatum majus, Odontoglossum vexillarium, and well bloomed Lælia purpurata, including the beautiful delicate coloured variety Russelliana, the bright Epidendrum rhizophorum, with Cattleya Mendeli and C. Mossiæ, helped to give variety in colour, and also to break up the straight lines of C. Skinneri.

PHALÆNOPSES AT OLDFIELD, BICKLEY.

These continue to increase in size. They are grown in baskets suspended from the roof, and the long healthy roots hanging down denote the care bestowed on them in watering. Each plant as it requires water is taken down and carefully steeped, and then hung up again in its place. This is a simple lesson which young men would do well to remember. I have frequently seen choice Orchids in baskets thrust into a vessel of water too small for the purpose, and the roots broken or damaged. So long as this occurs the plants cannot possibly compare with those of Mr. Philbrick or give the grower satisfaction. There is a fine display of flowers now in the other Orchid houses at Oldfield.—G. W. C.

DENDROBIUM CLAVATUM.

A CAPITAL coloured illustration of this Dendrobium is given in the *Botanical Magazine* (t. 6993), with the following remarks:—"This magnificent species has never been described or figured in all its beauty as here represented, and yet it is one of the earliest discovered of the golden Dendrobes of India, having been found by Wallich in Nepal in 1821, and subsequently by his collectors in Silhet. Unfortunately the specimens he distributed were not in flower, and the species was hence passed over by Lindley in his 'Genera et Species Orchidearum.' It was for some time supposed to be a variety of D. moschatum. The first description of it is that

in Lindley and Paxton's 'Flower Garden, drawn up from Assam specimens that flowered in England ;' it is accompanied by a woodcut of the flower. Though having a wide range in distribution it must be a rare species ; Strachey and Winterbottom found it in the North-West Himalaya in the province Kumaon, west of Nepal, which is perhaps the westernmost limit reached by the vast genus to which it belongs, but it has not been recorded from Sikkim or Bhotan, and very few collectors have met with it in Silhet or Assam. It must not be confounded with the D. clavatum of Roxburgh (D. sulcatum, *Lindl.*, *Bot. Mag.* 6962), a much more common species, and to which, from its club-shaped stem, the specific name of clavatum far better applies. The specimen here figured flowered in the Royal Gardens in September of last year ; the plant was sent from the Khasia hills by Mr. Gustav Mann in 1885, and flowers in September." The flowers are borne in racemes, and have broad rounded petals and sepals deep orange yellow, the lip having a bright crimson centre and a golden yellow margin.

ORCHIDS AT HOLLOWAY.

Mr. B. S. Williams's nursery at Upper Holloway is full of interest at the present time, and contains an excellent display of flowering Orchids. During several years the large Palm house near the office has been specially appropriated to the Orchid exhibition, but shifting the plants from their various quarters to this house was not found beneficial, and they are therefore more suitably grouped in their respective houses. The extent of Mr. Williams's collection is well known to Orchid growers, and it is not surprising that the home stock suffices to form a display of varied interest over such a long period in the year, though during May and June the greatest number is in flower. In another important respect the Holloway Orchids are interesting – *i.e.*, they are well grown, sturdy finely developed foliage and pseudo-bulbs or stems result in proportionately fine durable flowers. To this must be added the fact that the formation of the collection has been the life-work and study, the selection of species and varieties having been conducted with the keenest critical knowledge of their merits. Consequently in all the leading genera the best types only are represented, and it is for these that amateurs now look to nurserymen specialists when tiring of the numerous indifferent varieties that are unavoidably introduced with imported plants.

Læ'ia purpurata has been made a special feature, both plants and varieties being extremely good ; and a pretty group is formed at the entrance of one of the houses with these ; Cattleya Mossiæ varieties, Masdevallia Veitchi grandiflora, bearing twenty flowers ; M. Harryana, M. Lindeni, Dendrobium thyrsiflorum and chrysotoxum, Odontoglossum vexillarium, capitally grown ; the graceful Oncidium sarcodes at the back, the greenish white Cyrtochilum stellatum, Maxillaria grandiflora, Aerides Warneri, Cœlogyne Massangeana, and Scuticaria Hadweni. In another house we find a group comprising several similar plants, with Cymbidium Lowianum bearing five long racemes ; Cypripedium barbatum superbum, having eleven fine rich flowers ; and C. b. nigrum, with nine dark flowers ; Lælia cinnabarina, Dendrobium suavissimum the sweetly scented Burlingtonia fragrans, Anguloa Clowesi and A. Ruckeri, Dendrobium Dalhousieanum, with seven racemes of large flowers ; Brassia verrucosa, with eleven racemes ; Brassia Keiliana tristis, a dark form ; Brassavola lineata, and the wonderful Lælia elegans prasiata, which is one of many grand forms of L. elegans that enrich the Holloway collection. In a third house Vandas predominate, suavis Hrubyana, tricolor Patersoni, insignis, and the Glen variety being fine. Calanthes veratrifolia Dominiana, Textori, and Masuca grandiflora are represented by good plants, together with numbers of choice Cypripediums, Phalænopses, Thunias, Saccolabiums, Dendrobiums, &c. In the cool house Odontoglossums of the best varieties afford some bunches of spikes, beautifully contrasted with the richly tinted Masdevallias, while in one house is a valuable group of all the principal hybrid Cypripediums and rare species in the best of health and flowering well, C. selligerum majus being uncommonly good. Ferns, stove and greenhouse flowering and foliage plants, are in excellent condition, and the nursery altogether is well worth a visit.—Z.

THE EFFECT OF VEGETATION ON RAINFALL.

An interesting pamphlet, entitled "The Natural Law of Relation Between Rainfall and Vegetable Life, and its Application to Australia," has just been produced by Franz A. Velschow, C.E., of Copenhagen (Stanford, Charing Cross), in which, in the course of some forty pages, the peculiarities of the Australian climate are fully discussed. By comparing the recorded rainfall in different districts the author shows that as the moist air flowing in to land from the ocean rises at a short distance inland above what he terms a "dry air cushion," through which rain can only penetrate by the greatest difficulty—namely, after the air has become partially saturated. He contends that a gradual extension of the moist boundary could be effected by planting trees largely, as a circulation would then be established that would result in more regular and frequent rains. The subject is summarised in the following remarks :—

"Over the dry and warm tracts of Australia the general Heath-like vegetation is marked by a pervading blue-green colour, with dull leaves so arranged upon the plants as to afford but little shade. The Eucalyptus, or Gum Tree, and other trees and shrubs bearing bright honeyed flowers, together with thickets of Acacia and Marsh Oaks, give a peculiar character to the forest lands. As the foliage of these trees generally consists of heavy leathery leaves covered by a thick cuticular coating, the evaporation from them is exceedingly small, and it is therefore strange that the Gum Tree has been thought to possess the quality of removing the moisture from marshy places by being planted there. This is evidently owing to the circumstance that Gum Trees, when felled, are generally found filled with water in abundance ; but this is always the case with the vegetation found in deserts or very arid zones, more especially with the Cactus plant, which has been proved to give no evaporation at all, so to speak ; and they thereby become prepared to withstand excess of dry weather. As the camel before entering on his journey across the desert stows away a large quantity of water, so these trees of the desert prepare themselves for the dry season by taking in water ; but, like the camel, they economise this supply, being protected against a too rapid evaporation by their cuticular coating.

"It is to the small degree of evaporating power of the Australian vegetation generally that the irregularity of the rainfall may be considered due, and the rainfall could therefore be highly improved if by some means or other we could substitute for the present vegetation another possessing a high degree of evaporating power.

"Looking upon the subject at large the question before us may be defined thus : Is the want of trees exhaling much moisture in Australia due to the impossibility of their growth there, or is it due to accident ? It is well in this respect to notice how the earth's surface has been divided into six distinct regions, each with its own particular flora and fauna, more or less independent of latitude and temperature, but principally caused by the insurmountable barriers formed against their further spread by mountain ranges, deserts, and oceans ; and that it has been found that trees transplanted from one of these regions into another grow there equally well, or even better, than in their aboriginal home. Among these regions Australia, with the surrounding islands, forms one, and it seems therefore highly probable that European deciduous trees, or any other kind of trees of high evaporating power, would thrive equally well in the south-eastern temperate part of Australia, as in Europe. The desert theory now put forward serves to prove that the climate would be changed if we could manage to establish forest belts of deciduous trees over this south-eastern part of Australia. Along the coast deciduous trees grow exceedingly well, as can be seen in the botanical and private gardens, and there can be no doubt that they will grow equally well wheresoever the ground is sufficiently moist. It might, therefore, be a practicable undertaking to commence plantations at the coast, stretching thence further and further inland, the effect being that of breaking up the border of the air-cushion, so as to permit the rainfall along the coast to reach further inland.

"The difficulty would evidently at first be where to find enough of moist soil to start the plantations. But the various colonies have voted considerable sums of money for the conservation of water in general, and particularly for the irrigation of the Murray-Darling River. The evaporation from the country hereby brought into cultivation would in itself be very considerable, and could be highly augmented by plantations along this line of irrigated country. In this manner the air-cushion, too, would be likely to be broken along this line, the ultimate effect of works of plantation on both sides of the district being the entire change of climate in south-eastern Australia.

"To find out the most suitable trees for planting, it would be necessary to carry out careful measurements of the evaporation from different kinds of deciduous and other trees by planting them in large covered boxes constructed for this purpose. Among those which hereby show the highest amount of evaporation such must be chosen for plantation as will grow most easily in the colonies, besides being useful as timber trees.

"It might then even be found that the project of establishing the growth of these trees in Australia would be materially assisted by Nature, according to Darwin's theory of the survival of the fittest, as it of late years has been found that in northern Europe the Beech is gradually superseding the Oak, which was formerly the dominant tree. Likewise in Australia, if trees of a more vigorous growth than the native trees are introduced the ultimate extermination of the latter may be anticipated.

"From a geological point of view Australia is recognised as the remnant of some former extensive continent. By being situated in the central most elevated region of this continent Australia would in all probability have formed a desert exactly similar in position to the desert of Gobi in Central Asia. When afterwards the surrounding country became submerged this central part preserved the once-attained characteristic features of a desert—namely, a non-evaporating vegetation covered by an air-cushion, in spite of the oceans which have gradually approached the borders of this desert. In this way it is to be explained how it has been brought about that we nowadays find ourselves opposite this phenomenon, so extraordinary to all scientific minds, of a large desert island placed in the centre of the largest expanse of tropical seas. But the greater this absurdity appears the

greater is also the probability that the work of restoring this country to cultivation will prove to be an easy and delightful one, so that if the work is taken energetically in hand at once there can be little doubt that Australia, perhaps even before another generation has passed away, will have shown some marked signs of ultimately becoming one of the most fertile countries on earth.

"This geological explanation is, however, a suggestion which ought to be kept quite distinct from the other parts of my argument, which possess all but mathematical exactitude, being based as they are on the number of gallons of water exhaled by an ordinary tree during twenty-four hours, and the proved effect of this evaporation on the specific gravity of the atmosphere that absorbs it."

Notes & Gleanings

EVENTS OF THE WEEK.—The Royal Horticultural Society will hold a meeting in the Drill Hall, Westminster, on Tuesday next, June 12th, and the York Gala will open on Wednesday, the 13th inst., which, with the usual sales, will be the principal horticultural occurrences of the week.

—— ROYAL HORTICULTURAL SOCIETY.—We are informed that efforts are being made to render the next four meetings in the Drill Hall at Westminster specially interesting and attractive. The Assistant Secretary has written to several leading nurserymen and flower growers, calling their special attention to them, and asking their support during these two months, the height of the London season. The meetings and their special features are as follow:—June 12th, cut Rhododendrons, hardy Azaleas, flowering shrubs, Ranunculus, Anemones, and Iris. June 26th, Begonias, Gloxinias, Pelargoniums, cut Clematis, Pœonies, Roses, Pinks. July 10th, Roses, Lilies, Strawberries. July 24th, show of the Carnation and Picotee Society, also Ferns, Ivy and Zonal Pelargoniums.

—— THE WEATHER.—"B. D." writes—"May has closed and June begun with very unseasonable weather. In the middle of last week many of the hills in W. Perthshire were covered with snow. An intense frost is reported from the north that has made complete havoc of vegetables and flowers in gardens, and done much damage amongst forest trees. In S. Perthshire the 2nd and 3rd inst. were extremely wet with a bitter N.E. wind. Hawthorn is beginning to show blossom. The *Scotsman* of the 4th inst. contains reports from the north rather startling for the beginning of June. I therefore quote—'Snow fell over north of Scotland last Saturday. In Strathspey the hills were covered to their base, and water was coated with ice a quarter of an inch thick. At Balmoral snow fell for twenty-five hours, and last night it was lying several inches deep.'" More genial conditions have prevailed in the south, Saturday, Sunday, and Monday being extremely hot days. Tuesday was dull with very cold wind.

—— WE are desired to announce that the COLCHESTER AND EAST ESSEX HORTICULTURAL SOCIETY will hold a Rose Show on June 30th, at which liberal prizes are offered for amateurs. The Hon. Secretary is Mr. J. C. Quilter, Head Street, Colchester.

—— "G." writes: "TWO USEFUL FUCHSIAS for decorative purposes are Starlight and Prince Imperial, which are employed extensively by Mr. W. Holmes, Frampton Park Nursery, Hackney, in conjunction with other decorative plants, such as Pelargoniums, Rhododendrons, Hydrangeas, Ferns, and Palms. Starlight is a free flowering variety of compact habit, the sepals and tube white, and the corolla of a bright rosy tint and good size; it is regarded as a great improvement upon Mrs. Marshall, and is much appreciated in the market. Prince Imperial is a dark variety, with scarlet sepals and tube and deep purple corolla, of similarly free habit. They afford a pleasing contrast when together, and are very effective in windows or recesses."

—— MESSRS. E. H. KRELAGE & SON, Haarlem, send us a COLLECTION of BREEDER TULIPS, which they intend offering for sale next autumn, without waiting until they have "rectified." The flowers are large, of good form, and most varied in colours, purple, mauve, crimson rose, and vermilion shades being very abundant, and a number could be selected that, judged by a florist's standard, would be considered most promising when "broken."

—— IN recognition of the assistance rendered by MR. J. NEWTON on the occasion of the recent Show in the Inner Temple Gardens, he has been elected a Fellow of the Royal Horticultural Society without payment of the usual fees.

—— "M. C., *Ashton*," writes—"A decided acquisition to the select list of spring bedding plants will be found in MYOSOTIS GRANDIFLORA, a really grand improvement on the old form of M. dissitiflora, both in the size of the flowers and also in the profuse way they are produced from free growing yet compact little plants. As grown by Mr. H. Virgo at Portishead, the plant has a charming appearance, its large deep blue flowers and general habit giving one the impression of a blue Silene compacta. To judge from the great demand for its sprays in Clifton and Bristol the plant in question will undoubtedly become the most popular form of the poetical Forget-me-not. The enclosed flowers hardly do it justice, the hot weather has reduced their size and colour." The variety is a good one, as our correspondent represents, the flowers being much larger than those of the ordinary M. dissitiflora, but we have seen a variety shown by Mr. Virgo with much more deeply coloured flowers.

—— MR. H. CANNELL sends us a box of blooms of HOSE-IN-HOSE MIMULUS, and most effective a bed of these richly coloured flowers must be. They are represented in several brilliant varieties, every one possessing the duplex character in a marked degree.

—— LEEDS PROFESSIONAL GARDENERS' FRIENDLY BENEFIT SOCIETY.—"J. L. B." writes—"In the Journal, May 24th, there is an account of a very interesting presentation to the Secretary of this Society, and I thought I should like to encourage young gardeners to join such a Society in preference to mixed clubs which have all classes in them, whether they follow a healthy or an unhealthy calling. Gardening is considered a healthy occupation, and I find, as a rule, gardeners do not go on the club for a slight illness. I have often wished I knew of the existence of gardeners' clubs when I was a young man, and I should not have joined a mixed club. In the above mentioned gardeners' Club by paying only 1s. per month 10s. per week may be had during sickness, £10 at death, and £6 at death of a wife, and it does not matter what part of the country a gardener may reside, he can join and pay his money without ever going to Leeds."

—— MR. G. ASLETT, Warren Wood Gardens, Hatfield, Herts, sends us flower trusses of RHODODENDRON FORTUNEI, a variety MRS. C. BUTLER, which is notable for its powerful fragrance. The flowers are large and expanded, of a soft pale pink hue, in loose clusters, very delicate and charming.

—— THE following plants are figured in the *Botanical Magazine* for May:—T. 6993, D. elavatum, noted fully on another page. T. 6994, Allium Suworowi, a native of the Kerghis Desert and the vicinity of Bokhara, introduced by Dr. Albert Regel, and named in honour of Herr J. P. Von Suworow, Medical Inspector of the Province of Turkestan. It has scapes 2 feet high, and dense globular heads of mauve purple flowers. T. 6995, Alpinia officinarum, a native of South China, and formerly "in great repute as an aromatic stimulant amongst the Arabs and Greeks and in Western Europe. The flowers are white, veined with red, the long narrow leaves arising from a thickened tuber-like rootstock." T. 6996, Douglasia lævigata, a primulaceous plant from the Alps of Oregon, of similar habit to the Androsaces, to which it is nearly related, and bearing bright rosy pink flowers on short stalks. T. 6997, Passiflora violacea, a Brazilian species related to P. cornuta and P. Mooreana, introduced from Rio Janeiro to Kew by M. Glaziou; the flowers are purple in the centre, with white and purple rays and pinkish petals.

—— GARDENING APPOINTMENTS.—Mr. J. Rogers, late gardener to B. R. Langton, Esq., Langton Hall, Spilsby, has been appointed head gardener to R. Phipps, Esq., Buckenhill, Bromyard, Worcester. Mr. W. Strugnell, recently of Benham Court Gardens, Kingsclere, Newbury, has been appointed gardener to A. R. Baily, Esq., Willow Vale, Frome; and Mr. George Smith, who has been principal foreman at Mentmore for the last five years, has been appointed gardener to E. L. Rowcliffe, Esq., Hall Place, Cranleigh, Surrey.

—— "A PERTHSHIRE GARDENER" communicates the following:—"Some of the members of my employer's family, having had the pleasure of inspecting the famous DRUMLANRIG GARDENS lately, they saw much to interest and instruct them. Splendid crops of Grapes, Figs, Pines, and Peaches. In one of the vineries inarching was being done, the scions supported by bottles of water till the junction is completed. In other houses they saw plenty of the glazed pots described as extremely smart looking, and contained many fine healthy plants, a good number being Orchids. I hope we may also have a trial of them soon, as a good-sized conservatory is in course of construction at present. Another plant they saw was described as being tall, carrying large red flowers; it was very much admired. They were told what it was, but cannot remember. Could Mr. Thomson kindly tell us anything of this plant?"

—— MR. JOSEPH MALLENDER sends his monthly SUMMARY OF METEOROLOGICAL OBSERVATIONS AT HODSOCK PRIORY, WORKSOP, NOTTS, FOR MAY.—Mean temperature of month, 51·5°. Maximum on the 19th, 78·3°; minimum on the 10th, 28·2°. Maximum in the sun on the 6th, 130·5°; minimum on the grass on the 10th, 22·3°. Mean temperature of the air at 9 A.M., 53·9°. Mean temperature of the soil 1 foot deep, 50·9°. Nights below 32°, in shade three, on grass thirteen. Sunshine, total duration in month 201 hours, or 41 per cent. of possible duration. We had two sunless days. Rainfall—Total 0·74 inch; maximum fall in twenty-four hours, on the 29th, 0·27 inch; rain fell on seven days. Wind—Average velocity 12·0 miles per hour; velocity exceeded 400 miles on five days, and fell short of 100 miles on three days. Approximate averages for May—Mean temperature, 50·6°; sunshine, 174 hours; rainfall, 1·93 inch. The driest May since 1876, and the brightest since 1882. As is usual with such conditions, the days have been warmer and the nights cold. Vegetation very late.

—— THE BROWN WEEVIL.—Mr. George Bunyard, the Old Nurseries, Maidstone, writes:—"Will you allow me to call the attention of fruit growers and gardeners to this enemy, which has hitherto been overlooked by cultivators? It is a small earth-brown beetle, which being nocturnal in its habits, is not often detected. Its habit is to climb up the trees and bushes in the twilight and to devour the young buds as they appear. In May, until the buds sprout, the weevils will eat away the bark from the ends of the shoots, more especially from the sharp angles left in pruning, leaving the ends bare. Its attentions are not confined to one kind of tree, as it may be found upon all fruit, nut, and many ornamental trees, which, in isolated specimens, it will denude of its buds, so that the trees appear dead. It also affects Roses, and can be found on Rhododendrons, Laurels, and such large-leaved evergreens, where it confines its attention to young tender leaves, which afterwards assume a jagged appearance. It is not a new insect, but has always been a native, and is spread over the whole country, and my object in calling attention to it is to state that tar and similar substances placed on the bark will not arrest its progress, and the only effective remedies are: First, to catch them by night. One man carries a lantern, and another holds under the trees a net or white cloth, and the other throws the lantern on the tree, when they at once fall. The remainder (in the shady parts) will fall on a smart tap being given with the hand. The insects can then be collected and killed with hot water. They are so tenacious of life that none of the usual remedies will kill them. In fact, by accident, some were shut up in a tin box for twelve months and then came forth lively. Second, they may be killed in the earlier stages by ramming the soil tightly round the stem of the tree or bush, and thus smashing them, but as they become perfect insects they are tough and will stand a great deal without injury. Third, the soil round the trees may be made smooth with the foot and a few flat stones or clods of earth may be laid on it. The insects will crawl under this in the daytime, and can be caught by lifting the clods and watching the soil. At first none may be seen, as they are so near the colour of the soil, but they will soon move to get away from the light, and then can be detected and caught. In my opinion the orchards suffer most when a plantation of Rasps, Currants, or berries have been removed, as the insects then concentrate their efforts on the remaining trees. As a rule they are not so abundant in grass orchards. Cleanliness is very important, as they winter in tufts of grass, &c. It only remains for me to say that its Latin name is Otiorhynchus tenebricosus, and its allies, O. picipes and O. sulcatus, are also found on the same deadly work in its company. The latter is occasionally troublesome in vineries. As the insect is now at work prompt measures should be taken, as they will soon pair and lay eggs. Like other insects it passes through an egg state; a larva or grub state; a chrysalis; and emerges as a perfect insect or imago in April or May according to the weather In the grub state it also does much damage to the roots of trees and plants. Figured plates and further information can be found in Miss Ormerod's work on noxious farm and garden insects."

THE LATE CANON HODGSON.

DEATH, at the advanced age of seventy-six years, has taken a great lover of flowers and a true patron of horticulture; this village has lost a kind-hearted pastor, and a wide circle of friends a genial gentleman. He was a born florist, cultivating Carnations, Pansies, and Dahlias when quite a young man, and later on Gladioli; but of late years his special favourites were Roses, Chrysanthemums, Gloxinias, Zonal Pelargoniums, Azaleas, Begonias, and he knew their properties. Substance, size, colour, refinement, were the qualities he sought; and a flower without more than one of these he wished to be put out of his sight. He not only cherished flowers with an intense fondness, but was keen in the cultivation of Strawberries, Grapes, Pears, Apples, and also interested himself in the growth of Peas, Asparagus, Potatoes, and other vegetables.

It was our duty and pleasure to minister to his ruling passion in his declining years, and among many things to remind us of him are several volumes of this Journal with marginal marks, which will remain to us an index to his gardening tastes. Knowing a gardener's difficulties, he was equally ready to excuse failures and to applaud successes. A florist of years ago wrote of Carnations words which we will adopt for the deceased gentleman of flowers generally, "They were the marvel of my childhood, the admiration of my youth; in maturer years they lent a charm to many a rugged pathway on the journey of life: in old age they have been my familiar companions, and I shall continue to cherish them until my dying day."

His last utterance was of flowers. On Wednesday last his coffin, literally covered with wreaths, was borne to the grave very near the garden, which was to him a source of so much happiness. He was mourned by the assembled villagers, who will sadly miss one who had learned the luxury of doing good. We have lost a master whom, living, we regarded with the most profound respect: dead, we pay this tribute to his memory.—H. S., *Saltwood, Hythe.*

TRING PARK.

ADJOINING the quiet old Hertfordshire town of Tring, and about two miles from the station of that name on the London and North-Western line, is Lord Rothschild's estate known as Tring Park, which is unquestionably one of the best kept establishments in England. Some three or four hundred acres are occupied, the chief portion constituting a beautifully varied and well wooded park. The tastefully designed gardens and pleasure grounds are adequately furnished with shrubs and trees, while the extensive glass ranges are remarkable for the collections of admirably grown plants they contain. It is evidently an establishment where good gardening is thoroughly appreciated, and the gardener, Mr. E. Hill, meets the requirements of his employer with all the energy and skill which should be the result of liberal encouragement.

Time only admitted of a hurried glance at the park and grounds, but in the latter one dell or shrubbery retreat calls for special mention. It is an open space devoted to flower beds surrounded by steep banks, upon which Conifers and other trees with shrubs and the bolder herbaceous plants or bulbs are planted. Very notable are some hundreds of plants of Abies excelsa pumila, dwarf, compact, little specimens, about 2 feet high, which, placed on the lower part of the slopes all round the dell, have a striking effect. This is a good variety for the purpose, but there are several other similar dwarf forms that also present a remarkable contrast with the typical Abies excelsa, which received its name as the tallest of European trees, while these variations are strangely enough some of the dwarfest. They have mostly originated under cultivation, a well-known variety, A. excelsa Clanbrasiliana, having been found at Moira, Lord Cranbrasil's estate near Belfast. A. excelsa Gregoryana is from Cirencester, and then there are pumila mentioned above, and pygmæa, the origin of which I have not seen recorded. A finely developed specimen of Abies Hookeri arrests attention in this part of the garden, and the handsome Cupressus Lawsoniana lutea succeeds equally well, and one plant 16 feet high is now assuming its bright yellow colour. Retinospora obtusa aurea, 16 feet high, is an uncommonly good example of this bright graceful variety, numerous other Conifers of similar interest abounding on the slopes and lawn. For spring effect a score or more of large beds are planted with Myosotis dissitiflora surrounding a central one filled with Veitch's Dwarf Yellow Wallflower, affording a fine contrast. The Forget-me-nots last week were extremely beautiful, as the plants are placed closely together, forming dense masses of lovely clear blue flowers.

ASPARAGUS.

Returning to the trimmest of kitchen gardens, one of the Tring specialties is at once observed—namely, Giant French Asparagus, and the results of the system adopted are sufficiently satisfactory to convert many doubters respecting the merits of the variety and its produce. Prejudice has been created against the Asparagus in some cases by estimating it qualities from samples sold in English shops, which, at the least, hav

probably been cut for two or three days, and sometimes much longer, but when served at table as it should be, within a few hours of being cut, it would satisfy the most exacting connoisseur. The variety grown at Tring is the Giant Argenteuil Asparagus, which produces succulent stems frequently an inch in diameter at the base, and it is cut in beautifully blanched lengths of 8 inches, the whole of which when young and fresh can be eaten. Strong roots are obtained and planted on the level just beneath the surface of well prepared soil, and 3 feet apart; over each root is placed a mound of fine soil, and this again, if greater depth is needed, is covered with cocoa-nut fibre refuse. The shoots come through this strong and clean, and they are readily cut without damaging others not sufficiently advanced. One bed has been cut from for four years, but sufficient stems are allowed to remain to each root to allow it to strengthen itself, and liberal top-dressings of old manure are applied. The usual way, however, is to cut the beds in alternate years, and one this season undergoing the renovating will be ready for next year, and the bed yielding this season's supply will then be rested.

FRUIT HOUSES.

The fruit houses comprise a remarkable Peach case, 360 feet long and 6 feet wide, the perpendicular front lights and the comparatively flat roof affording a convenient space that is utilised for a low stage for Strawberries, &c., without shading the principal occupants of the case. The back wall is covered with extremely healthy fruitful Peaches and Nectarine trees, with upright cordon Pears on the wall piers at intervals. The early Peaches are Grosse Mignonne and Royal George, the favourite Nectarines being Elruge and Lord Napier, the trees giving ample indication of the good treatment they receive in their well developed but not rank growth and foliage, which is as clean and free from that special Peach pest, the red spider, as anyone could desire. The chief midseason and late varieties of Peaches are Royal George, Violette Hâtive, Lord Palmerston, and Walburton Admirable; and of Nectarines Lord Byron, Pine Apple, and Victoria.

One point that Mr. Hill rightly considers of great importance in successful Peach culture is a liberal supply of water, and this is effected by means of a hose screwed into the hot-water pipes when required, and the water is allowed to run into the border until it is thoroughly saturated, partial supplies being carefully avoided. In the earlier stages when the heat of the water has sufficiently declined, the border can have a soaking at a temperature that will not give such a check to the roots as the icy-cold water often poured into the soil. The foliage is freely and frequently syringed by hand. A border 6 feet wide in front of the Peach case is also well utilised without shading that structure, two rows of horizontal Pears on the Quince being there planted with Strawberries between them, and crops of fine fruits are obtained. A range of vineries in four divisions, each 27 feet long and 17 wide (¾ span) is devoted to early midseason and late Grapes, of which there is a capital show of bunches in all stages. Muscat of Alexandria is first favourite, and is capitally grown. Madresfield Court is also successfully managed, Foster's Seedling and Black Hamburgh affording the ordinary early supplies. Alnwick Seedling has been found to be greatly improved in flavour by working it on the Royal Muscadine, a hint that is worth the consideration of those who grow the variety for late use, but find it only second rate in quality. Two varieties that are valued at Tring for their flavour are Dr. Hogg and Grizzly Frontignan, the first of which is more frequently seen in modern gardens than the latter, which is one of the oldest Grapes grown in England, as it is said to have been introduced by Sir William Temple in 1654. Both, however, are finely flavoured Grapes, but Dr. Hogg has the advantage in point of constitution, and as Mr. Barron tells us, "the great fault of Grizzly Frontignan is its tendency to shank. It grows freely, fruits and sets freely, and promises well till it approaches maturity, when it almost invariably shanks." The end division of the range is occupied with Figs, Brown Turkey chiefly, but Negro Largo, which when planted out was too gross in growth to fruit well, in pots is most prolific, and perfects ample crops of fine fruits.

CARNATIONS.

Plant culture under glass is conducted on an extensive scale and with marked success, especially as regards Carnations and Orchids, the leading favourites at Tring Park. The Carnations are simply wonderful, and in numbers and culture are probably unequalled in Great Britain. They are extraordinary in all respects, and would alone render the garden a remarkable one. Two varieties constitute the bulk of the stock under glass—namely, the blush white Souvenir de la Malmaison and the pink variety of the same type, which is usually designated Princess of Wales, though it was shown by Mr. Turner and certificated last year (R.H.S., July 12th) as the Pink Souvenir de la Malmaison. They are both of strong Clove-like habit, with broad leaves, massive fragrant flowers, and form vigorous bushy specimens that have a very imposing appearance. Several span-roof houses are devoted to the 1800 plants grown of these two varieties, and a grand appearance they have, the majority in 8-inch pots, the plants 18 inches in diameter, and bearing from eight to twelve magnificent flowers each, some of which are 6 inches in diameter. Most of the flowering plants are two years old, the limit of their existence, as it is found preferable to obtain a fresh stock of young plants every year than to grow the old plants for a longer period. Good sandy loam only is employed as soil without the admixture of manure, but a little assistance is afforded when the flowers are advancing, and nothing more is required beyond promoting sturdy clean growth by close attention to watering and ventilation. They afford flowers from May to the end of July, and the value of such plants in any establishment could not be overrated.

Other tree Carnations for winter flowering are also accorded some space, notably Empress of Germany, a large white-flowered variety, but La Belle is considered the best of the smaller white varieties for general utility. Irma is a good pink form; Lucifer, scarlet; and Andalusia, yellow, the last being found much better for winter flowering than Pride of Penshurst. Out of doors also large beds are devoted to such Carnations as Sir Beauchamp Seymour, W. P. Milner, Thomas Moore, and Florence, which are most valuable for cutting.

ORCHIDS.

Turning to the Orchids we again find much to admire, and a pleasure is apparently taken in proving that plants reputedly difficult to grow can be made to flourish like weeds. Phalænopses, for instance, which puzzle many able cultivators, are represented by 200 uncommonly vigorous plants of the best forms, which are grown in a small lean-to house facing the south, shading being afforded by means of a wash applied to the glass and roller blinds. Most of the plants are in upright teak cylinders filled with potsherds, the roots being allowed to ramble freely outside, as also they do in the case of some plants in baskets suspended from the roof. Abundant moisture and heat are supplied, and 1½-inch pipes connected with the ordinary hot-water pipes below are taken along the roof, one in front and one at the back, a system adopted with evident advantage in all of the plant houses at Tring Park. Theoretically, it might be thought that these roof pipes would be less useful for Orchid houses than in those devoted to Pelargoniums or similar plants that require a drier atmosphere, but practically they seem to possess a double use—*i.e.*, assisting in the dissipation of moisture accumulating on the glass or woodwork, and in the preservation of a more uniform temperature. This, no doubt, is only one of the many small matters that conduce to success, but it is worth consideration, and combined with a healthful cleanliness and most careful avoidance of check at any time, it has something to do with the unusual fine condition of the Tring Phalænopses. Numbers of plants of P. amabilis have seven to ten leaves each, P. Stuartiana six leaves, P. intermedia Portei seven leaves, a grand specimen; P. Schilleriana with two growths and eight leaves each is a wonderful plant, the leaves 18 inches long by 4 and 5 inches in width. P. Sanderiana and several others are similarly remarkable.

The Vanda house is also a lean-to facing south, and contains one of the finest collections of plants of V. teres and V. Hookeri in the country. Over 400 plants are grown, which are placed in beds of sphagnum at the back and front of the house above layers of potsherds for drainage. The house is never shaded except when the plants are flowering, as a free exposure to the sun is one of the requirements of these Vandas, and perhaps the most important. They evidently like their treatment, both growing and flowering admirably. Of Cattleyas and Lælias there is a fine stock, C. Mendeli, C. Mossiæ, C. gigas, C. Dowiana, and C. Trianæ being strongly represented by excellent varieties. A large and healthy example of the beautiful C. exoniensis, and one of the true autumn-flowering C. labiata are noteworthy, as also are the plants of Lælia purpurata. Other houses are devoted to choice Odontoglossums, Cypripediums, Epidendrums, Calanthes, and various useful Orchids, and a new range is just being completed that will be mainly appropriated to similar plants. A newly furnished conservatory, and numerous pits for ordinary decorative plants, with a large supply of Nerine Fothergilli major complete the principal portion of the attractions of this exceedingly well kept garden.—L. CASTLE.

AUBRIETIAS AND DWARF IRISES.

In the notes of spring-flowering at Belvoir (page 428) reference was made to Aubrietias, and especially to the glowing effect produced by the distinct A. Leichtlini. In one of the beds a small colony of dwarf Irises, I. pumila bicolor, had a charming effect. A little more may not inappropriately be said about the spring-flowering plants in question. Taking the Aubrietias first, there are scarcely any other spring-flowering plants capable of succeeding in such a variety of ways. It matters not whether they be planted on the well made rockery or the flat surface of a bed, for any of the species will quickly be at home in either place, and equally so if overhanging some projecting ledge of rock, or rambling over ruins; down sloping banks they form sheets of colour that remain fresh for weeks, if not for months, while they appear to thrive nearly as well in town as in country gardens.

Turning to the best of well-known kinds mention may be made of A. deltoidea and A. purpurea. The last named is from Asia Minor, and is noteworthy on account of its having given rise to the now more important forms, such as grandiflora, græca, Campbelli, and so on, though upon this point there seems a wide difference among botanists. Before me I have living specimens of purpurea type, also Hendersoni, Eyrei, Bougainvillea, and græca, all agreeing generally with purpurea. In Wooster's "Alpine Plants," the first three named are given as forms of A. deltoidea, though in no plants of my acquaintance do I remember the deltoid leaf characteristic displayed. The kinds named, however, rank among the showiest of this group, or at least that portion generally in

commerce. Hendersoni has bright purple flowers with a dark centre; græca has bright lavender flowers; Bougainvillea light blue; Eyrei deep lavender shaded mauve, very pleasing. Beyond these are several very distinct, particularly A. violacea, having violet purple blossoms, and A. Leichtlini. It is this last named which may be seen nestling around the base of the Iris in the illustration. A more delightful plant it is next to impossible to conceive, both as regards its colour and freedom of flowering. In colour it is quite a departure from all else. Speaking from the masses as seen at Belvoir, the colour is lively rose, still deeper when in bud. This is the most effective of all, the plants representing such a carpet of flowers in spring time that are not excelled, if equalled, by any others so easily raised and grown.

Now a word or two respecting the dwarf Irises. The dwarf cœrulea, cœrulescens, and bicolor, the last-named being faithfully represented in the engraving. The variety cœrulescens is of that clear almost transparent sky blue which renders it conspicuous at a glance, consequently a general favourite. The same remarks apply equally to the variety figured, in which the clear white of the standards shows to good advantage. These dwarf Irises have appeared to advantage in the Chiswick collection this spring, and with the glowing Aubrietia Leichtlini should find their way into many gardens.—A Londoner.



Fig. 63.—Aubrietia Leichtlini and Iris pumila bicolor.

Iris, I. pumila or the Crimean Iris, has during the past week or two attracted more than usual attention. Several of the most distinct varieties were well represented among the groups of hardy plants at the Royal Botanic and Inner Temple Shows, notably among those shown being I. pumila lutea and I. pumila cœrulea. I. nudicaulis was also well shown. This is a native of Southern Europe, and though a very dwarf Iris does not appear to belong to I. pumila, but is regarded as a distinct species. Few plants are more effective, however, than the deep violet purple flower of this. In some positions it is a day or two earlier to flower than I pumila varieties, and the last-named precede the section known as I. olbiensis, thus bringing the successional flowering well into June. In both the pumila and olbiensis sections almost the same variation of colour may be found. The latter is, however, somewhat taller and a little later in blooming. Of the pumila section, the best are lutea,

MY GREENHOUSE IN 1887.

I shall not be in the least surprised or offended if many of the readers of the Journal will say to themselves, "What do we care about your trumpery greenhouse? You make as much fuss about it as if it were a whole range of elaborately arranged plant houses." It may be so, but I am assured on the other hand that my small experiences have been helpful to many; and this I am convinced of, that no owner of his ranges of greenhouses has more enjoyment out of them than I have out of my single house, and although it requires some generalship to get all I do out of it, I am amply repaid for all my trouble: from early spring indeed, from Christmas to the end of October my house is never without its interest to me, and whether I succeed or fail in my culture there are lessons to me for the future.

I made one alteration last year which cost me some pangs of conscience, but which I do not regret having made. I gave up after some twenty-five years or more the Camellias, in which I used to take much pleasure. I thought, however, that there was more to be had out of pot Roses. The Camellias took up a good piece of the house and somewhat darkened it, whereas the Roses had light foliage, and at the time of the

year when light was most wanted for the house have made but little growth, and consequently are not so much in the way. Then the Camellias required a great deal of looking after, the leaves were apt to get dirty, and had to be kept clean by frequent washings, so at last I gave them up. I have now some nice plants of Tea Roses, including such kinds as Niphetos, Anna Olliver, Innocente Pirola, Jean Ducher, Miss Ethel Brownlow, The Bride, and Catherine Mermet. The plants of Niphetos have already become too large, and I must exchange them for smaller ones. I had much pleasure in these last year. Unlike the Camellia one can always cut them, and they give a succession of blooms, giving, too, a foretaste of the harvest which we hope to reap out of doors by-and-by. The Bride has fairly established itself as a most decided acquisition.

I was rather fearful last year that I should have but little bloom from my Lapagerias, which are trained up at the east end of the house. I had taken them down in the previous autumn and repotted them, if the term is applicable when the plants are grown in a box. This apparently checked the growth, which it would not probably have done had there been more heat in the house, but as mine is essentially a cold house they had not so much chance. However, be that as it may, *rosea* made no growths from the bottom, while two made by *alba* were cruelly eaten off by slugs, so that there were no root growths, while none of the buds on the branches pushed at all. To my surprise, however, both plants were covered with bloom, which came out from the old wood. These blooms were very fine both in size and colour, and so I was agreeably disappointed, and this notwithstanding the hot summer, which must have been bad for the Lapageria which likes shade and moisture.

Disa grandiflora, which I have grown so successfully for many years, was not a success in 1887. I had read that it liked being pulled about and divided, and so as some friends were anxious to have bulbs I did this with the result that where in 1886 I had had some twenty spikes of blooms, I had only one last year. The plants did not seem to recover the shock; but although I was thus disappointed, I am glad to say that as I this year did not shake them out they have quite recovered, and look as if they were preparing for a good bloom. I fancy that not only in this, but in many other cases, we are too fond of repotting. There is, however, a more robust variety of Disa, with inferior flowers, to which this process is applicable, but I shall certainly not subject my plants to a similar course again, giving them, however, fresh peat, and when running removing them bodily into a larger pan, for I find that pans suit them better than pots.

My Cyclamens were not a success in 1887, although I have always before done them well, but they made poor growth, and on examining the pots I found that they had made but few roots; I, therefore, concluded that we had put something into the soil that they did not like, and I am sure now that this was the case, for this year the same corms have flowered to perfection. They were completely shaken out and repotted in thoroughly sweet soil in which there was a good portion of charcoal. Thus failure has led one to be more careful for the future. I may say that I tried two different methods with them after flowering; some were laid on their sides and thus dried off, while others were kept in a cold frame and never thoroughly dried, and I did not see any difference in the corms or in the flowering.

Bulbs form rather an important feature in my little greenhouse. They come in early in the year when flowers are so much valued, and they are easily put on one side after flowering. Leaving them out of the question, Roman Hyacinths, Roman and Paper White Narcissi, and Hyacinths, which are really to be regarded as annuals, I may mention some that I have found particularly useful, ornamental, and easily managed. Everyone knows the Neapolitan Allium, which has been largely used of late years, but there is a much better variety, which I received from Ant. Roozen & Son, called Hermetti grandiflorum. The former has a curious way of hanging down its flower stems, which gradually twist back and assume the upright position, but they are always somewhat slight in the flowering stem, and so either hang about or require stakes; but the variety of which I write throws up its stems straight at once, is much more stout, and thus the umbels of flowers are held boldly up. The flowers are a little larger than those of the Neapolitan sort, and altogether it is a very desirable variety. Tropæolum tricolor is another very great favourite. I have three pots of it, and nothing can be more attractive than these plants were. They are trained on a wire trellis, which they cover from top to bottom with their little bird-like beautifully coloured blossoms. I wonder that these bulbs are so little grown. I go into many greenhouses at this time of the year, but rarely do I find them, and yet all who come to see mine are especially delighted with them. They are very easy of cultivation, and require but little looking after in the matter of training them on the trellis. The shoots at first require a little regulating, but afterwards they may be left to themselves.

With Freesias I was very successful. One often hears complaints as to persons not being able to grow these most charming bulbs successfully. I have of late years had no difficulty with them, have raised a number of seedlings, and greatly increased my stock, so as to be able to give quantities away to friends, and I am inclined to think that the secret of success was in the thoroughly maturing the bulbs. After mine have flowered I place them on a shelf near the glass where the pots are fully exposed to the sun's rays, and there they are left until the foliage is completely dried up. They are then, but not until then, taken down and laid under the stage, there to remain until potting time comes round again. As I have already said, a good deal of fine charcoal is used in the compost, as I am sure bulbs rejoice in this. Another class of bulbs were very good with me—the early-flowering Gladioli of the nanus and ramosus section. These I planted in a 6-inch pot in the usual bulb compost, and they came in very well about the same time as the Pelargoniums. Of course The Bride or Colvilli alba is well known, but there are others in both sections well worthy of a place in any greenhouse; they are, moreover, delightful for cutting. Of the ramosus section, besides the type, La Ville de Versailles, lilac, red, and purple; Ne Plus Ultra, deep red flaked with white; and Rosa Mundi, deep rose with large white flakes are well worth growing; while in the nanus section there are Fire King or Ardens, fiery scarlet; Blushing Bride, rose with deep markings; Delicatum, rose flaked white; and Rosy Gem, rose flaked pink. These all did well, and were very effective.

Ixias I have had to treat as annuals, for I have never been able to flower them a second year, and yet with the allied genera of Sparaxis and Babiana I have had no difficulty. There are no more beautiful flowers for the greenhouse than the Ixias, and the colour of viridiflora is unique amongst flowers. I, however, last year subjected them to the same baking process that I have done the Freesias, and am curious to see what the result will be. Azaleas were a great success, for although I have no heated structure in which to place them after they have flowered to enable them to complete their growth, they made excellent growth and formed nice bushy plants with plenty of buds for the following year. I never place them completely out of doors, but after they have completed their growth put them under a glass shed fully exposed to the air. I do not pretend to say that this is the best plan, only that it suits me best, and that the plants are good and covered with flowers.

I have already said in a former paper something on the subject of Lilies, and a correspondent to whom I owe many apologies asked in reference thereto a question with regard to L. punctatum and the colour of its anthers. I could not have given him any information, for I had not noticed, but will promise him carefully to note this year. I had a fine lot of Lilies, the only fault I found with them being that they were rather tall for my house. However, they are so lovely that I must forgive them that, for they come in so usefully in the autumn that I cannot dispense with them.

And what shall I say of the glories of my Maréchal Niel, which I have in the small lean-to annexe attached to my greenhouse? It is still in the pot, and, I am happy to say, now in its seventh year shows no sign of decay. It has filled all the back of the annexe, and would fill the whole of it if I allowed it to do so. The foliage is most abundant and luxuriant, while I gathered from it last year upwards of 350 flowers. Where the roots have gone to I have no conception. They have, of course, worked through the hole at the bottom of the pot and travelled off somewhere, but people who see only the pot, and know nothing of its history, are very much nonplussed when they see such luxuriant growth. The flowers were not large, but they were exquisitely formed, nor were they of that deep rich colour which we mostly associate with the Maréchal, but they were very beautiful, and I shall be indeed sorry when the symptoms of decay set in. When they do I believe there is nothing for it but to take the plant away altogether and substitute another.

These are some of the things which did best with me in my small house in 1887. Other things I had, but I have simply written of those which I consider most worthy of note, and some of which are not always, even in much larger places and houses, not so well grown as in my small house.—D., *Deal.*

A DAY OUT.

NEWTON'S DRY GLAZING.

THOUGH a day was spent agreeably in driving through a fertile district and resting in a beautiful garden, half an hour must suffice for describing something of what was seen during the spurt from town. Finding myself at Hitchin, a much more agreeable place than appears from the station, I called on Mr. Edgar Newton and inspected his system of dry glazing. When a gentleman so scientific and practical as Mr. A. H. Smee, and so solicitous for his Orchids, finds the Newton system highly satisfactory, and when a gardener so experienced and, I may say, so jealous of innovations as Mr. Allis of Old Warden, was after a close inspection enabled to speak of the plan with approval, I thought there must be something in it. It has been advertised, but is not, perhaps, yet by any means well understood, yet it is simple enough. There is nothing whatever complex about it. Instead of the glass resting on wooden sashbars and unbedded in putty, the bars are of T-shaped galvanised iron, and no putty is used in glazing. The squares of glass are held secure by small copper springs, while the yielding nature of these allows of expansion and contraction by heat and cold, so breakage cannot occur through rigidity. Grooves in the bars also collect moisture that forms on the glass by condensation, and thus there is no drip. The squares are "lapped" in the usual way of putty glazing, and the thin edge of the bars rising an inch or so above the glass not only forms a convenient rest for blind rollers, but a current of air can circulate under the blinds; thus shade may be afforded without air being excluded, and a little filters through the roof—a great advantage in hot weather.

A roof glazed on this system bears a resemblance to the old style, but is lighter and necessarily more durable, while periodical paintings are obviated. A square of glass can be slipped up and taken out in a moment from any part of the roof in case of accidental breakage. The

cost of these roofs, in which lightness, strength, and durability are combined, is now the same as a rule as when good wood is used instead of iron. Many practical gardeners have inspected the Newton glazing, and all, without exception, pronounce it good, while it has further secured the approval of the engineer of the Great Northern Railway.

Mr. Newton is growing Tomatoes in some small houses, and it is not easy to imagine any roofs better adapted for ripening and colouring this and other fruits that require a maximum amount of light for perfecting it; while this, with freedom from drip, is equally favourable for plant culture. This is without doubt a good system of glazing, and as it becomes better known can scarcely fail to commend itself to many trade and private growers of plants and fruits. A house glazed on this plan would be excellent for Roses in summer and Chrysanthemums in the autumn, for the greater the amount of light the greater the substance and better the colour of the blooms. One side of a small span-roofed house at Hitchin is formed of corrugated iron sheeting and is found cheaper than boards, and is at least equal in appearance. The ventilators in it are quite new in idea and effectual. There are other features, such as strengthening span-roofs without cross-bars, and fixing wires for training purposes, worthy of notice, but these require to be seen to be fully comprehended. A quarter of an hour is gone, and the remaining time must be devoted to the garden above referred to and some wayside features of the fertile district of Bedfordshire in which it is situated.

OLD WARDEN.

As was stated in the Journal a few years ago the fine estate of Old Warden was purchased by the late Mr. Joseph Shuttleworth of Lincoln, from Lord Ongley. It is grandly timbered and the soil of the best character. The place, moreover, possesses historical interest. It is the home of the Warden Pears on which the "Friars of Orders Gray," after feasting on pullets and cream, themselves "by denial did mortify with a dainty bit of a Warden pie." But nothing remains of the old Abbey beyond some relics in the beautiful Swiss garden. The old hall was taken down by Mr. Shuttleworth, and a handsome Tudor mansion erected, with a clock tower and chimes similar to those at Westminster. It is an imposing pile. The village, which is a model one, was rejuvenated and made to form an ornamental approach to the park. On one side is a Pine-clad hill; on the other, at this season, such a wealth of Lilac as is perhaps not to be seen in any other village; and the cottages, many of them with dormer windows and thatched roofs, have a picturesque effect amongst and behind the flowering and evergreen shrubs. The village is kept in pleasure ground order by Mr. Allis the gardener, and his pretty cottage on the hillside, with terraced lawn in front, is admired by the many sightseers who visit this arcadian village, especially during Lilac-tide.

A drive of nearly a mile conducts through the park to the mansion. Near the entrance gates Conifers have been planted and are forming fine specimens, notably Abies nobilis, which bristles with its conspicuous upright cones. The pleasure grounds are very extensive; admirably kept and enjoyable. Embowered walks and glades afford cool promenades in summer, and conduct to one of the most charming gardens to be found in the kingdom. This is the Swiss garden, so called because a most picturesque cottage or tea room stands on a prominent mound, the rustic balcony on one side, under the wide eaves, overlooking a dell. This garden has been entirely remodelled by Mr. Milner and Mr. Allis, and by its hill and dale of smooth lawn, its twisting streams meandering among the trees; its islands, bridges, rockeries, and charming vistas, with its underground conservatory as a surprise, reached through a grotto, with rich stained glass windows here and there, form a combination of nature and art so balanced and blended as almost to disarm criticism, and the only suggestion that arises is the removal of a few trees here and there that possibly obscure something more beautiful than themselves, and which appear to contract somewhat one of the most delightful enclosures that has been created by the art of man. There are few flowers, and few are wanted in this sylvan scene. That it is a cherished garden is evident; indeed Major Shuttleworth has happily both the means and the will to keep his splendid estate in high order, and this, too, is a boon to the working tenantry he so largely employs.

The walled kitchen garden is not large, and it seems difficult how it, with the glass structures, can be made to meet the demands of the establishment; but Mr. Allis is a gardener of great experience, a thinking as well as a working man, and knows how to turn every inch to advantage. Peaches on the south wall bear abundantly, and the Vines in a good range yield wonderful crops of Grapes year after year. For nine or ten years they have been spurred, and the "snags" are only about an inch long, many less, and even Gros Guillaume bears on every lateral by this close pruning. Laterals have been encouraged to the ground, with the result that the rods are thickest at the base, tapering upwards as Vine rods should, as the sap has then free transit, and the roots being in a good medium, free growth follows. Growth is started slowly, and fire heat, with air, supplied after the roots are active and right through the autumn for ripening the wood. To this is attributed mainly the continued fruitfulness of these good Vines. Melons in a pit are bearing a good second crop nearly ripe, the first having been cut early in May. Mushrooms in a very cool shed are as fine as they can be produced at any season, and a ridge under trees in the open air has been bearing for four years, and we could have cut most of half a peck last Saturday from a square yard. They keep coming up unexpectedly in great clusters, and the ridge will remain undisturbed for this season at any rate. Has anyone known of a Mushroom bed to remain productive for a greater length of time than this outdoor ridge? Old Warden is within two miles of Southill station on the Midland line between Bedford and Hitchin.

PROFITABLE LAND CULTURE.

The half hour is expired, so there is only time to mention the splendid Wheat culture in the district, the high farming, market gardening, and seed growing, which enables the cultivators to pay from £3 to £5 an acre rent. It is one more example of what appears to be a simple lesson slowly learned—namely, that when a man's capital is equal to his acreage, and his skill equal to his capital, that a living can yet be made from the land and a substantial and fair rent paid out of the profits of cultivation. It is bad culture, the result of lack of capital or knowledge, or both, that is ruining the land. Acres of "ridge" Cucumbers are grown on the level by sowing the seed in rows in rich ground between strips of Rye sown a few yards apart in the autumn, and which soon grows into shelter. Early Potatoes are also grown between these sheltering lines.—EXPERIENTIA DOCET.



ROSE SHOWS IN 1888.

June 26th.—Boston.
" 28th.—Brockham and Ryde.
" 30th.—Eltham and Reigate.
July 3rd.—Bagshot, Canterbury, Diss, and Hereford.
" 4th.—Croydon, Dursley, Farnham, Hitchin, and Richmond (Surrey).
" 5th.—Bath, Farningham, and Norwich.
" 6th.—Sutton.
" 7th.—Crystal Palace (National Rose Society).
" 10th.—Gloucester, Ipswich and Oxford.
" 11th.—Ealing and Tunbridge Wells.
" 12th.—Birmingham, Carlton-in-Lindriek, and Winchester.
" 14th.—New Brighton.
" 16th.—Newcastle-under-Lyne.
" 17th.—Leek and Ulverstone.
" 18th.—Birkenhead.
" 19th.—Helensburgh.
" 20th.—Darlington (National Rose Society).
" 21st.—Manchester.
" 24th.—Tibshelf.

In the above list the only exhibitions not held by the National Rose Society, or by Societies in affiliation with it, are those at Birmingham, Boston, Carlton-in-Lindrick, Dursley, Manchester, Newcastle-under-Lyne, and Richmond. In the case of Birmingham and Boston, where the shows extend over two days, the date of the first day's exhibition only is given.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

NEW PEDIGREE TEA ROSES—HARDY.

I SEE Messrs. Dickson, Newtownards, have announced in your columns two new Pedigree Roses—Caroline D'Arden (H.P.), and Lady Castlereagh (Tea). The question of the hardiness against frost, if I may so put it, was raised some time ago in the Journal, of those Tea Roses, so I resolved to try Dickson's Miss Ethel Brownlow (Pedigree new Tea) planted out in the flower border. Though it was killed to within a few inches of the soil, strong shoots have started from the base and promise splendid blooms—much finer than those grown in pots in greenhouses, though not so early. Any reader, therefore, anxious to try those delightful new Roses will be perfectly safe in planting them out. They will do better if the soil is not made unduly rich.—W. J. MURPHY, *Clonmel.*

REINE OLGA DE WURTEMBURG.

PLEASE note the vigour by the sample of foliage I send you of what I believe to be the best evergreen climbing Rose—namely, Reine Olga de Würtemburg. It is wonderfully vigorous with me, and the flower, though thin, is of a delightful colour.—J. A. W., *Alderminster.*

[The terminal leaflet exceeds 3½ inches in diameter and 4½ inches in length; the others are longer, but not quite so wide. The sample represents clean, vigorous, healthy growth.]

ROSES IN WINTER.

THE time for starting the young Roses planted out or repotted in September depends upon the completion of the last growths they pushed from the base. If the plants in the first division have enjoyed a few weeks' rest by the middle of January they should be started gently into growth; the object being to induce Safrano, Isabella Sprunt, and those on the roof to make a strong vigorous growth that will be matured early in the season, for without this is accomplished the plants will not be in the best condition for producing early flowers the season following. Those in the other divisions may with advantage be allowed a longer season of rest. Those in the third house may advance gradually, and may be encouraged to grow under warmer and more genial conditions. The second division may be started a month after the first. H.P.s that

may be forced must for the present be left until I have further considered Tea varieties for the purpose we have in view.

Beginners in the culture of Roses for winter will be anxious about the vexed question of pruning prior to starting the plants into growth, but at the present time this matter will only have passing notice, and will be fully dealt with, because pruning should be conducted on two different principles according to the object in view. The use of the knife to the plants in their present stage and condition does no good, but rather the reverse, as it has a tendency to check the plants. Their roots are still active, and this quickly induces growth to start from the weak shoots, encouraging greater activity at the roots and eventually stronger shoots from the base. These will be stronger and earlier than would be the case if the plants were well pruned. Some may be inclined to doubt this who are firm believers that hard pruning is followed by greater luxuriance, but, however sound such practice may be in cases where the plants have thoroughly matured wood and are well established, it does not hold good with the plants in the partially ripened condition. Early worked or early rooted cuttings of Gloire de Dijon will be strong with shoots 10 to 15 feet in length, more or less according to the quantity of side shoots they produced, provided they were trained upright. Plants in this condition may have the unripe ends of the shoots removed, for they will produce a number of small but useful buds, which if they are allowed to expand will do them no real harm. To flower them that are planted out, however, is a loss of time, especially if they have been thinly planted with the object of increasing the number of shoots under the roof the second season. In this case they may be cut back to the eaves of the house. As many shoots as are required may be trained at the base horizontally until they reach the place where they are intended to be trained, and then they can extend up the roof. Another plan is to lay the plant, or as much of it as may be required to fill a given space, along the base of the house, and then train shoots upright from it. Either plan is good, and the results are much about the same. The remarks on pruning apply equally to the plants in the centre beds or those trained upon the roof.

Whether the Roses generally should be allowed to flower the first season after they are planted out is another matter of importance. This to a large extent must be decided by each cultivator. But it will be as well to point out that the more the plants are flowered in their early stages the greater will be the length of time before they attain the object the grower must keep in view—namely, strong growth that can be matured early. Year-old plants of Maréchal Niel, if they have been well grown, will yield on an average thirty blooms. I have cut forty-five from plants rooted in February, and it may seem hard to cut away these; but if the future well-being of the plants is considered it must be done. The constitution of this variety I firmly believe is sadly injured by overflowering it in the early stages of its existence. The short life of this favourite variety before it cankers and finally dies must be taken fully into consideration, so that the method of culture to be pursued should be of such a nature as far as possible to prolong its life in robust health. The plant will certainly linger for a long time after it is badly cankered, but the blooms are small, colourless, and practically of no market value.

Not only is overflowering injurious, but a too robust growth in its early stages is also detrimental. This Rose strongly grown often in the richest of soil resembles in no small degree an overgrown Vine, which to all outward appearance should fruit well and freely, and perhaps does for a few years, eventually to collapse. From the first its constitution is impaired by being built up too quickly—not half ripened, and therefore the strain of fruit-bearing after a few years proves too much. I firmly believe the Maréchal can be overgrown in its early stages, and as growth continues until late in the season the wood in the first years of its life is never well ripened, and thus the seeds of destruction are sown. Moderate growth the first season, produced without those uphill systems of forcing that are practised to turn out luxuriant plants with firm and well matured wood should be the aim of cultivators who desire to so build up the plant that the ordinary span of life allotted to this variety may be considerably exceeded. If this variety then is of moderate growth the first season and established in the soil before winter, cut well back instead of flowered, say early in February, strong growths that will have a chance of ripening before the close of the season will be produced that are certain to bear good flowers. When they are allowed to flower much time is lost, and the plant is growing when it should be maturing its wood. If our borders were made of such materials that would produce moderately strong firm woody shoots that can be well ripened, instead of those strong soft ones generally seen that have no solidity, I am of opinion that the plant would live longer and yield better coloured flowers.—Wm. Bardney.

(To be continued.)

FRUIT FARMING IN FLORIDA.

A Scotch gentleman now on a visit from Florida, whose business brings him in contact with traders of all classes, and to whom the deplorable condition of our agricultural industries generally, on this side, is perfectly well known, communicates to the Anglo-American Live Stock News Agency the following remarks upon Florida as a field for farmers, fruit growers, kitchen gardeners, or other small capitalists. Those desirous of obtaining further information can communicate with Mr. Stewart, 16, Thurnham Street, West Derby Road, Liverpool.

During the short time I have been here my attention has been attracted largely towards the various measures promoted, both publicly and privately, for improving the condition of agricultural matters. Considerable reliance seems to be placed on the efforts of Government, and particularly those efforts which are being directed towards establishing a higher educational standard. While quite in sympathy with this latter movement, and appreciating fully the value of a scientific training, I cannot see how any immediate relief or benefit will accrue to those now suffering so severely from the existing depression. Generations hence will, it is to be hoped, reap the full reward of the present agitation, but this bright future will not relieve the present burdens. What, then, is to be done for those who, having lost nearly all their capital, find themselves about to be handicapped in the race for life against younger and better educated competitors? My answer is simply emigration. But where? Not to the blizzard-blighted regions of Western America! Not to the ice-bound Manitoban prairies! Not to the tropical plains of the Argentine! Not to the far-off New Zealand or Australian Colonies, where success is so difficult of achievement! Where then? To Florida, the most fertile of the Southern States of America, where the greater portion of the soil is of the richest description, and available for the production of every species of crop, fruit, cereal, or vegetable.

That this wonderful country has so long been allowed to remain undeveloped is probably due to the ignorance displayed as to its position, climate, and agricultural resources. Misconceptions of the most serious character have been allowed to go on unchecked, increased indeed until recently by the operations of unscrupulous speculators, who, in order to get rid of certain poor lands—for there is such a thing even in Florida—grossly deceived their clients, who not unnaturally formed their opinion of the country from what they saw and experienced. A few plain facts may be given, which I hope will clear up many of the erroneous impressions current on this side, and considerably enlighten anyone anxious to found a home and make an independent living in a land where overcrowded competition and other difficulties are unknown. Florida has a history covering nearly 400 years, and yet in spite of her unequalled natural advantages, she has to-day a smaller population, in proportion to her size, than any State in the Union, excepting perhaps Nevada or Colorado. Florida now is no longer an unknown country, a constantly rising tide of immigration is flowing in from all parts. True, many of the visitors are only flocking there for health, but once having breathed its balmy airs, not a few of them remain permanently.

So recently has the attention of land operators, fruit growers, agriculturists, and others, been directed to Florida, that it will be many years before the entire State will be in private occupation. The class of emigrants, however, who could best take advantage of the opportunities presented in Florida for making a competency are farmers, market gardeners, fruit growers, or others, possessed of a moderate capital. Alachua County, where I come from, is reckoned the fertile centre of Florida, and lots of ten, twenty, and forty acres of cleared and uncleared lands can be had on reasonable terms. A ten-acre lot is generally considered sufficient for one man to work—that is, easily, and without any great expenditure for occasional hired labour. Too much importance cannot be given to the fact that fruit and market gardening form the staple industry of this section of Florida. In the neighbourhood of Gainesville, Strawberries, Peaches, Le Conte Pears, Japan Persimmons, Figs, Grapes, Plums, and Pomegranates, are cultivated in perfection, and find a ready market in all the great cities of the Northern, Eastern, and Western States. Numerous wild fruits and Nuts of various kinds also grow in luxurious profusion. During the early shipping season Strawberries realise fabulous prices, ranging from 10s. to 15s. per quart. The Strawberry season lasts from February till June, values falling gradually as the season advances and supplies increase. The very remunerative character of the Strawberry crop may be realised when I state that from £120 to £150 per acre are frequently made, a very moderate estimate indeed being £100. The yield during the season per acre varies from 2000 to 3000 quarts. Prices for other fruits are proportionately high during the earlier months and equally as profitable.

For kitchen garden produce the returns are almost beyond belief—Irish Potatoes, Sweet Potatoes, Cabbages, Onions, Turnips, Radishes, Parsnips, and field Peas, commanding the best prices to be obtained in the North from January to May, no other produce being on the markets during this period of nearly six months. With respect to the other crops with which home farmers are more intimately acquainted, such as corn, oats, and hay, there are plenty of facilities for cultivating and disposing of the same, and also for the cultivation of Cotton, Sugar, and Tobacco. For the three last-named products Florida already enjoys a high commercial reputation.

I do not make any special reference to the great Orange-growing industry of Florida, because, to do it justice, it would require a whole paper, but wherever the Orange business has been carried on with capital, energy, and intelligence, it has proved an investment of the richest kind. The Orange groves of Alachua County are reckoned among the finest in the State. In this county, which, it must be borne in mind, I have had specially in view throughout, it being my home county, the climate is simply magnificent, a cool breeze prevailing night and day during the summer months, enabling even the most delicate to enjoy sound refreshing sleep. Water of the purest mineral kind is abundant, in fact the natural supply is practically inexhaustible. A perfect network of railway systems are rapidly converging at Gainesville, which, from its central situation, will shortly be the business capital of Florida. Already the State Military Academy and U.S. Land Offices are established there, and it is likewise proposed to locate in it the State Agricultural College, simply because it is the centre of a great agricultural region.

From the foregoing facts, which have been set down in real, sober honest truth, I think it will be patent to everyone that Florida, as an outlet for agriculturists, cannot be surpassed. The acquisition of land is offered them in perpetuity for a sum actually less than ordinary annual rent charges on this side, and within twelve months after settling on cleared lands, sufficient money can frequently he earned to cover the cost of purchase. To any intelligent, industrious man with a very moderate capital, an honourable, independent position is at once assured.

BELGIAN WORK AND WAYS.

LET no one suppose I am going to describe the Belgian nurseries and the work that is done in them. It is sufficient to say there are between two and three hundred hortieultural establishments large and small, chiefly small, in Ghent alone to render any sueh idea impracticable. It will be readily understood that much more than a local and even a national trade is essential for keeping all these plant manufactories in brisk working order. The trade is international, the chief establishments having business relations with every State in Europe, and far beyond the borders of the Old World. The past generation of Ghent horticulturists, the Van Geerts, Verschaffelts, Van Houttes, De Smets, and others, must have been observant, far-seeing, enterprising men. They perceived the national advantages of the situation—free soil, abundance of water, cheap labour, and direct lines of communication by land and sea for conducting a trade world-wide in its ramifications. Energy, industry, with keen business aptitude did the rest, and they lived to see the old capital of Flanders occupy a central position in the universe of horticulture. All the qualities that created the plant industry that has heeome so great appear to have been inherited by those who have suceeeded the old masters, and the present representatives are not likely to allow the trade and the fame of the city to suffer in their keeping. Competition hecomes brisker and brisker. New businesses spring up in every country, but Ghent appears to hold its own as a chief source of supply of plants for the demands of nations. The people are a social community, and know the value of combination for a common object, while individual zeal is stimulated. They are excellent organisers and splendid entertainers. They prepare to economise for great efforts. For these they labour, and when the time eomes for displaying their strength, issue invitations and provide attractions that are irresistible. They secure friends from all lands, spare for nothing in satisfying them, and send them home with something to talk about. This may be called showy, theatrical, sensational, or what not; but no matter how described, the great gatherings mean business and develope trade, as they ought. They are means to an end, and this is attained, congratulations being fairly due to the promoters on the success of their enterprise, and no one can begrudge them the reward they may win by their labours.

The local trade in plants in Belgium is trifling in comparison with the trade in England, relatively considered; or, in other words, in a given radius round Ghent, the city of nurseries, there can be no approach to the amount invested in gardens to that expended in an equal area round the chief towns in Britain. Though the well-to-do Belgians attend flower shows very well, there is no great crush, and it would probably be less if the shows were much more frequent and correlatively of reduced dimensions and impaired novelty, the consequence of familiarity. Nor is there an apparent great demand for well-grown flowers by the general community if we may judge hy the presence of plants in windows and dwellings; or better, perhaps, hy the supply in the markets. The large open space of the Plas d'Armes, Ghent, a parallelogram, perhaps 200 yards long and 50 or 60 wide, margined with trees, is converted into a flower market on Sunday mornings. The plants are arranged in semicircular groups, about as many in each as could be arranged in a handcart or Belgian dogeart, these differing very widely from dogcarts in England, for in Belgium the dogs draw the carts, in England the carts carry the dogs. There were eighty or ninety of the groups referred to, the plants being worth little from our point of view, the majority being in 3 and 4-inch pots, and appeared to represent the contents, very much mixed, of workmen's greenhouses, and might bring in a few francs to the possessors. They had nothing in common with the "market plants" in England that display such splendid culture and are correspondingly valuable. Ornamental foliaged plants, such as Palms, Aspidistras, Ficuses, and the like, appear to find more favour than flowering plants do for home adornment, and beyond question the former last longer and are cheaper in the end. Nor do flowers appear to be grown to any noticeable extent in gardens attached to dwellings either in the suburbs of towns or in the country. There is a marked absence of the trim little gardens that form pleasant appendages of the houses of the masses, where plots can be had, to which we are accustomed; indeed, people who might do so do not grow their own vegetables in anything like the variety and to the same extent as is common in Britain. The Belgian workers are not gardeners from our point of view, and they seem to avoid indulgenee in what may be termed the luxuries of the earth, devoting their time and strength to the production of neeessities. Possibly it has been found that in the supply of vegetables for market the small cultivators of necessarily limited quantities cannot successfully compete with expert market gardeners who produce them in larger hulk for the demands of towns. Nor do we find bush fruits, such as Strawberries, Currants, and Raspberries, anything like so freely grown in Belgium as in England, while the Belgians do not grow Rhubarb, nor, as a community, do they care for Cucumbers.

To return to the Ghent nurseries. If these cannot be described they cannot be ignored. and, presumably, few readers of these notes who may visit the Brussels Exhibition this year would think of returning without a day in those nurseries. They are easily reached by tram or otherwise from the Plas d'Armes, the two hotels there, the Royale and Poste, being the favourite houses of Britishers. In order to see the most nurseries in the least time a tram may be taken to the Porte de Bruxelles, which is not much more than a mile, and you land at M. Pynaert Van Geert's. There you find an accomplished horticulturist and most genial man, who converses in English very well, while his better half speaks our language like a native. It is a well arranged, well furnished nursery. Orchids, Clivias, Palms, Begonias, and most other plants being represented in the best established and many new varieties. An easy walk brings to M. de Smet's, where splendid Bays are to be seen outside, and the finest collection of Cacti and other curious within, besides a general stock of miscellaneous plants. Almost within stone's throw is the old nursery of the late Jean Verschaffelt, now De Smet Frères. Here are avenues of standard Bays outside, the other great feature being the Kentia house, consisting of a series of span-roofs supported on iron pillars, covering a space in which 15,000 or 20,000 Kentias are planted, on what may be described as slate stages, in beds 5 or 6 inches deep, paths running between along the centre of each division. From a saddle boiler exposed in the house flow pipes are conducted overhead—that is, under the purline, where the roofs rest on the pillars, the returns dipping and conducted to the boiler just under the slate stages, so that gentle heat is imparted to the soil in which the Palms are growing, while heat is also diffused in the atmosphere. It is an excellent arrangement, and the forest of young Palms is sufficient to "strike a stranger." Almost adjoining is M. D'Haene's well stocked, clean, and interesting establishment. As in other Belgian nurseries a great increase in Orchids is noticeable here, while Palms and various other plants are admirably represented. Opposite is the establishment of M. Dallière, but there was no time for calling, hut various plants in the great Show demonstrated that good work is done in the establishment. A walk of five or ten minutes and we are at the greatest of the plant emporiums of Belgium—the world-famed Van Houtte's. If I had to tell in a word what is to be seen there I should say everything in the plant line, hardy and tender, outdoors and in, that is in demand hy cultivators in all countries. It is a great universal supply establishment, and was never in more thorough working order than now. The linguistic accomplishments of M. Van Houtte are remarkable. He appears to be at home with all nationalities, and speaks English like—well, exactly like a fluent American; and as an entertainer is not soon to he forgotten. On the opposite side of the city there is, among others, the extensive and complete nursery of M. Auguste Van Geert, and here, again, we find an admirable English-speaking proprietor and most agreeable man; hut all the Belgian nurserymen accord a pleasant reception to visitors of kindred tastes with themselves—the De Coeks, Vervaets, Vervaenes, Vuylstekes, with others whose names are familiar to readers of garden literature. They are too numerous to be even mentioned, but the scenes of their labours are easily reached by all who have a day or two at their disposal in Ghent.

We now leave the city of nurseries, but b fore doing so will try and settle a dispute respecting the pronunciation of its name. The question propounded is this—"Is Ghent sounded like 'Gent,' the abbreviation of gentleman, or is the 'h' mute and the 'g' sounded as in 'get?' "I hope the latter is the ease," writes an interested gardener, "or I shall have to pay." Our friend may compose himself, he will not have to "pay," unless in his gratitude he is constrained to send me a guinea for the Gardeners' Orphan Fund, which shall be entered, if he likes, under the signature of "John of Gaunt," that celebrated historical personage having heen so named because he was horn in Ghent, or Gand, according to the original French appellation. And now, awaiting the fee for the advice solicited, we return to Antwerp, and pass on the way a substantial building bearing in large letters the sign "Ecole d'Horticulture."

A good deal has heen heard from time to time about schools of horticulture, and their establishment has been advocated in England for making hetter gardeners. There is or was a "school" for this object at the Crystal Palace, and Chiswick has been proposed as a "seat of learning," where students may "graduate" as certified cultivators. It is something to talk about and write about certainly, and the subject will perhaps be written about and talked about till Chiswick as a garden is talked out of existence, and that will settle the matter. The hest schools of horticulture in Britain are the well managed gardens of the aristocracy and affluent, and the best gardeners in the world have been trained in them; then after the multitudinous details of practice are learnt there is the splendid establishment of Kew as a finishing school, where lectures of great value are delivered; hut the resources of Kew are obviously inadequate for teaching men the duties they have to perform in maintaining unbroken supplies of vegetables and fruit for the demands of families, while the important branch of forcing early crops is not practised at Chiswick, nor is it likely to be. There will always be plenty of gardeners equal to all the duties required of them, trained in the best of existing schools, with plenty to weed out. But to this Belgian School of Horticulture. It is a substantial building, with a garden containing fruit trees. The students learn to draw plans inside and prune trees outside. I saw no glass structures. On inquiry of persons competent to speak on the subject, and who are well acquainted with British gardens, I was informed distinctly that the schools possessed no means of teaching practical horticulture equal to our best private gardens, and that the students could not take the management of such

gardens and maintain regular supplies of the different kinds of produce required by their owners. The scholars after their training find employment as best they can as landscape gardeners, not as cultivators; and as affording slight testimony of the value of our "rude" system of training men without technical schools, the fact may be recorded that of the two best managed private gardens I have seen in Belgium, one is in charge of a Britisher, and the other of a native, who was taught English in order that he might read the *Journal of Horticulture*, for learning English work and ways, which he represents very well on Belgian soil. So here against the theory of some of our "school" advocates, and most excellent men, we have the practice of King Leopold and his loyal subject, and great amateur horticulturist, Mr. J. Everaerts, who did not go to a "school of horticulture" for their gardeners.—A JUROR.

PLUNGING PLANTS.

[A paper read by Mr. Wm. Bardney, Norris Green Gardens, before the members of the Liverpool Horticultural Association.]

WE have to consider whether plants can be grown better with their pots protected from atmospheric conditions by plunging them in tan, cocoa-nut fibre refuse, sawdust, ashes, soil, or any other material, or by growing them with their pots fully exposed. What are the advantages to be gained by a general system of plunging? and what are the disadvantages that can reasonably be urged against it? I shall contend, then, that it should be practised for the economical advantages it offers. If gardening is to prosper in the future the cost of production must be duly considered, so that the returns will justify the outlay. If labour can be saved by plunging, why persist in growing plants with their pots exposed? Appearance will always have to be considered in gardens as well as economy, whether in private or trade establishments. What renders plant houses more disagreeable and unsightly than dirty stages and pots? The work of keeping the pots clean is considerable, which by plunging would be entirely dispensed with. There would be no stage-washing, for open trellis staging is not yet obsolete, but it should be. If gravel is used it soon becomes green, and entails as much labour in washing or renewing as the plunging material would cost. The labour of pot-washing is saved, practically so, for what will have to be done is reduced to a minimum. When the pots are constantly exposed they soon present an unsightly appearance, and they are no sooner washed than they are green again. Use ordinary pots, follow a system of plunging them, and this laborious system of pot-washing will be dispensed with.

But the labour saved in this matter so far, is not to be compared with that saved in watering. Watering, to do it well, is, perhaps, the most expensive item in the production of plants when grown on the ordinary methods with their pots exposed. The labour can scarcely be estimated, for so much depends upon the supply, and whether it is close at hand or the reverse. By plunging the pots evaporation is arrested, and very little moisture is drawn from the soil in which the plants are growing. When the surface of the soil and pot is covered very little moisture escapes, only what is naturally evaporated from the leaves and stems of the plant. Evaporation will go from the surface of the plunging material, but if a judicious system of syringing is followed daily as the state of the atmosphere and the requirements of plants demand it is replaced. To do this does not require one-tenth the labour entailed in watering when plants are grown on the usual principle. Not only can plunging be proved to be economical, because it saves labour in pot-washing and in watering, but because there is a corresponding saving of food provided for the plant within the limit of the pot. I think it cannot be disproved, or even doubted, that rain will wash down into the earth, and often below the reach of the roots of plants, to be carried away in the drains, much of the essence of manure when applied in autumn, even if placed on the surface of the soil. Of course considerably more will be lost, if I may use the term, on light than heavy soils. What is the rainfall of our climate in comparison with the amount of water poured into the soil of plants when they are grown with their pots exposed? I contend, then, that growing plants with their pots exposed to the atmosphere results in the waste of more food from the soil than is taken up and utilised by the plant, in fact more than is really needed to carry out its proper functions to sustain health and vigour. It may be argued that the requisite food can be supplied to the surface, as I readily admit, but it strengthens my argument that a system of culture should be adopted by which the food supplied to the plant when it is potted can be retained for the plant's use, and not washed away. This can be accomplished by plunging, evaporation is thereby arrested to a large extent, and it is not necessary to pour one-tenth the quantity of water into the pot. The food placed within the pot at first is sufficient, then, for the plants for a much longer period than would be the case if watered as many times as becomes necessary when they are grown with their pots exposed to the atmosphere.

In further considering the benefits that result from plunging, it is evident the system provides the most uniform condition about the roots both as regards moisture and temperature. By the ordinary method of watering this cannot be done, for the soil is seldom in that satisfactory condition; it is either wet or dry, and they need water during dry weather two and three times a day, more or less according to external conditions.

I have said that by plunging a more uniform temperature about the roots is maintained. Some may deny this, and point to the genial warmth that encircles the pots in our glass structures. But we must not overlook the fact that they cool in a corresponding manner. The variations of temperature to which the roots are subjected are greater then than can possibly be the case when the pots are buried beneath the surface. The roots beneath the surface may not become so warm by day as those fully exposed, but they are warmer at night. To be understood I will put it in simple form. A pot exposed will become frozen all round it, not only on the surface, while the one plunged would only freeze on the surface, this is supposing they are exposed to a moderate frost only. By plunging the pots are protected from extreme heat and cold, more in accordance with the conditions provided for plants in a natural state.

If we turn to plants grown in glass houses and plunged, it may be pointed out that those in large pots would be much cooler at their base than they would on the surface. There would unquestionably be a difference, as great as exists when plants are growing in a state of nature. If they are cooler by day they have the advantage by night—that is in a natural state; but under our artificial system they would be cooler at all times below than on the surface unless bottom heat was employed. The use of bottom heat and plunging would appear by the statements of some cultivators to be inseparable. I intend to separate them, for bottom heat need form no connection with the system of plunging I am bringing before you. I do not advocate the employment of deep brick beds in the centre and sides of houses for the purpose of carrying into effect a system of plunging. I object to these brick beds, in the first place because they prevent providing for the roots of plants the uniform temperature desirable; secondly, because the two outer beds, part of them at least, are exposed to the cooling condition of the external air. Plants near the outer wall would, during cold weather, be many degrees cooler than those nearer the path; in fact, they would be too cold to insure their doing well. Thirdly, because it obstructs the means of evenly distributing the hot-water pipes. These objections alone are sufficient to guide us to consider whether arrangements cannot be provided by which these objections can be overcome without adding to the expenses of construction and production.

The beds for plunging should be provided on the same principle as the side stages of our houses when erected with legs of iron connected with angle irons secured to them at the back and front, leaving a clear space at the back so that the heat from the pipes can pass up. The central bed would be constructed on the same principle, with the pipes distributed below it. I need not enter into details how large pots could be plunged on this principle without the front edges looking untidy, by a thick layer of plunging material, or a deep edge that could be furnished in a more striking manner than is the case at present if the structures were required for ornamental purposes instead of for growing on. This plan would provide for the roots being as warm at the base as at the top, because slates absorb heat to such an extent that they quickly become thoroughly warm. It is radiated, under certain circumstances equally as quick, and slates are therefore the most objectionable base that can be employed for plants if the pots are stood upon them in cool structures without gravel or some other material. The last is no part of our subject, and is only alluded to in passing because such objectionable practices are persisted in, and the gardener often blamed because plants fail to do well on them. The new Vine house at the Aighurth Nurseries is exactly to my fancy as far as the distribution of the heat is concerned, and the method of plunging that was adopted with the Vines early in the season. The arrangements are worthy of special note, because they have been the result of careful thought and consideration.

Plunging the pots is advocated because it protects the roots from injury. How quickly are the silk-like roots of many plants injured when the pots are exposed to the sun and the drying conditions of the atmosphere! Even when the sun has but little power, moisture from the pot and soil is evaporated at such an enormous rate that injury to the roots in a greater or less degree can scarcely be prevented. Who has not protected the pots of Heaths, Azaleas, and other hardwooded plants on the sunny side to prevent the roots being ruined by the heat the pot naturally absorbs? Why is this done? Such practices strengthen my argument that the protection of the pots insures the roots of the plant against injury. If we consider the roots as "absorbent organs," every precaution should be taken to preserve them. Injury to the roots means a check to the plant, the evils of which may not be perceptible for some time. I believe that the foliage of more Heaths is browned, and eventually falls, while Azaleas lose before flowering a greater percentage of their leaves by injury to the roots through the exposure of their pots than from any other cause.

By plunging plants earlier, quicker and increased root activity is ensured, and in consequence a better and more luxuriant growth follows. To prove this take two cuttings equal as far as the wood is concerned, make them of equal weight, and put them into the propagating box to root, say two Crotons. Treat them to the same heat and atmospheric conditions, only one must be plunged, covering the rim and surface of the soil. When rooted place them in 5 or 6-inch pots, plunge the one again and grow the other without for a time. Now, turn the two out of their pots, wash the soil from their roots, and when thoroughly drained weigh them, and it will be found that the one that has been plunged has not only the most roots, but will be the heaviest. The one may be watered and the other given none after it is rooted, provided the soil is in an intermediate state of moisture when potted and the plunging material is kept moist. An example may be given to show the difference in the supply of water needed when they are plunged and when they are not. I have rooted Crotons in 2-inch pots, and they have been repotted until they were placed in 10-inch pots, and filled

them with roots before water was poured into the pots. They were well syringed, and the plunging material kept moist. Lift two Roses, pot them, and plunge one outside in ashes below the surface, and stand the other on the walk. Water one when it needs it, and give the other none, if the soil is in a proper state of moisture when potted. Examine when frost compels their removal to frames, and it will be found that the plunged one has double the roots of the other, and the soil in a much sweeter and better condition. Plunge Lilacs, Guelder Roses, or any similar plant after potting or pruning in autumn in ordinary garden soil for the next season's foreing, and the season must prove exceptionally dry if they need a supply of water. I need not enumerate examples of the advantages gained by plunging, because they can be tested by all who will put the system into practice. From a general system of plunging Orchids must, however, be excepted.

I said it was necessary to consider the disadvantages that could be urged against plunging. The only one of weight that can be brought forward is that of over-watering. Now, this when carefully considered is a difficulty that bears no comparison with the mistakes that are made, often unavoidably, in watering plants when their pots are exposed. Watering properly when the pots are plunged is a mere matter of training. If they are over-watered it arises from either lack of proper training, ignorance, or generally from carelessness. To water plants properly when they are plunged only needs observation and thought. This seeming difficulty in a method of procedure that offers advantages, the importance of which cannot well be over-estimated, is readily overcome.

THE DISPERSION OF SEEDS AND PLANTS.

It may seem strange, at first sight, to assert that cattle have been the means of distributing the seeds of certain plants from one country to another, but a statement is made by Grisebach respecting Pithecolobium Saman, a large tree native of Tropical America, now naturalised in Jamaica, that the "seeds were formerly brought over from the Continent [of America] by cattle." This statement has been carefully examined, and it is fully borne out by facts. Formerly, Jamaica, like Trinidad at present, was dependent for cattle on Venezuela. The food of the animals during their voyage consisted amongst other things of the pulpy legumes of Pithecolobium Saman. The seeds being very hard were uninjured by the process of mastication and digestion, and they were deposited in the pastures, where they germinated and grew up into large trees. In this instance the seeds were carried across the sea a distance of about a thousand miles, and there is no doubt that the cattle were directly concerned in their introduction. Indeed, without them the seeds, even if accidentally introduced amongst the fodder, would not have been placed under such circumstances as would have enabled them to give rise to plants. In the first place, by being passed through the animals the seeds were softened and the period of germination hastened. In the second place the seeds had a suitable medium to promote germination, and this enabled the young plants to withstand the season of drought which is incidental to almost every tropical country. In this instance we have cattle not only the means of introducing the seeds of a valuable tree, but also involuntarily instrumental in establishing the tree in a new country, and providing shelter, shade, and food for their progeny. Those acquainted with the Guango or Rain Tree, as this Pithecolobium is locally called, will fully realise its value as a shade and food tree for cattle, and they will also appreciate the singular concourse of circumstances by means of which such a tree was introduced to a new country by the very animals which required it most.

It is possible there may be some who will doubt the possibility of seeds retaining the power of germination after undergoing the processes of mastication and digestion, and especially in the special case of ruminating animals. There is, however, very clear evidence on the subject. It is a common occurrence in India to utilise the services of goats to hasten the germination of the seeds of the common Acacia arabica, known as the Babul. This tree belongs to the same natural order as the Pithecolobium, and grows in the poorest and driest soils of India. The Babul seeds will not germinate readily in the hot weather, and it is the regular habit, in order to save a season, for a person desirous of a crop of seedlings to make a bargain with a herdsman or a neighbour who possesses a flock of goats to quarter them for some days in a small enclosure in which they are fed on Babul leaves and pods. The droppings of the animals contain a certain number of seeds which are uninjured, and these now readily germinate, and give rise to plants the same season. I am informed by Dr. Watt that in India "several other plants are treated in the same way." The seeds of the several species of cultivated Guava are hard and do not easily germinate. These, however, are said to germinate more freely and readily when they are picked up in night soil.

While on this subject I would mention that when at St. Helena in 1883 I expressed some surprise that no attempt was made to utilise "urban" manure in the neighbourhood of Jamestown, when the land was so impoverished and yielded such poor crops. I was met by the fact that if such manure was largely used the land would become overrun with plants of the Prickly Pear (Opuntia Ficus-indica), the fruit of which is largely consumed by the inhabitants. There is little doubt that the seeds of this plant, like those of the Guava, and I suspect also species of Passiflora, which are swallowed whole, are capable of germination after they have passed through the human body. Another instance occurs to me where the use of manure has been the means of distributing an undesirable plant on cultivated lands. In many tropical countries a Grass known as Para, Mauritius, or Scotch Grass, and sometimes as Water Grass (Panicum barbinode), has been introduced from Brazil, and highly esteemed for its rapid growth and nourishing properties. It grows well in moist situations, on the banks of streams, and even in soils so swampy as to be suitable for nothing else. In such situations it spreads rapidly and yields abundant food for cattle and horses. Nothing, however, could be worse than this Grass for cultivated areas, where the land is required to be kept free from weeds, and where crops of Sugar Cane, Coffee, Tea, and Cacao are raised. It has been found that where animals are fed on this Grass the joints even after passing through the animals have been known to grow. Hence the manure, if freshly used, has been the means of establishing the plant over wide areas.

In a recent work Mr. Ball has drawn attention to numerous introduced plants which are met with in South America. He naturally mentions the Cardoon, the wild state of the common Artichoke, which is now more common in temperate South America than it is anywhere in its native home in the Mediterranean region. Darwin doubted whether any case exists on record of an invasion on so grand a scale. Several hundred square miles are covered with this introduced plant, which has overrun all members of the aboriginal flora. The introduction of the Cardoon appears to have been effected directly by man for the purpose of contributing to the food supply of cattle; but as regards another widely spread plant the mode of its introduction is not clearly known.

Mr. Ball states:—"As to many of these [introduced South American plants] it appears to me probable that their diffusion is due more to the aid of animals than the direct intervention of man. This is specially true of the little immigrant which has gone farthest in colonising this part of the earth—the common Stork's-bill (Erodium cicutarium), which has made itself equally at home in the upper zone of the Peruvian Andes, in the low country of Central Chili, and in the plains of North Patagonia. Its extension seems to keep pace with the spread of domestic animals, and as far as I have been able to ascertain it is nowhere common except in districts now or formerly pastured by horned cattle. It is singular that the same plant should have failed to extend itself in North America, being apparently confined to a few localities. It is now common in the Northern Island of New Zealand, but has not extended to South Africa, where two other European species of the same genus are established."

Erodium as a genus is separated from the true Geraniums amongst other reasons on account of the tails of the carpels being bearded and spirally twisted on the inside. It is possible that these characteristics have enabled the seeds to attach themselves to the legs and bodies of cattle, and so effected their distribution over wide areas in such situations as are favourable to their growth.

In the Island of Jamaica we have a remarkable instance of the naturalisation and wide distribution of an introduced plant in the case of the Indian Mango. In an official report, published in 1885, I stated that to the Mango, possibly more than any tree in the island, is due the reforesting of the denuded areas in the lower hills; and as in consequence of the changes taking place in the climate members of the indigenous flora are unable to maintain their ground, it is fortunate the island possesses in a vigorous and hardy exotic like the Mango the means of counteracting the baneful effects of deforestation. It specially affects land thrown out of cultivation, and the sides of roads and streams where its seeds are cast aside by man and animals. It practically reclothes the hills and lower slopes with forest, and it enables the land to recuperate its powers under its abundant shade-giving foliage. It is strange that in Ceylon, which is so much nearer the home of the species, the Mango does not spread by self-sown seedlings. This corroborates Mr. Ball's statement with regard to Erodium cicutarium. The latter is widely spread in South America, but only sparingly found in other countries under apparently exactly corresponding conditions. We cannot say why such anomalies exist. They do exist, however, and offer problems which can only be solved by a closer study of the conditions of plant life, and the interdependence of plants and animals acting and reacting one upon the other.—D. Morris (in *Nature*).



HARDY FRUIT GARDEN.

Peaches and Nectarines.—These flowered very freely, and the fruit has set thickly, but unfortunately the foliage is much crippled and dirty. We kept the blinds and fish nets over the trees longer than usual in order to screen them somewhat from the cold easterly winds, though this does not appear to have done much good. There are many more swollen and curled leaves than usual, and these ought to be at once picked, as if left on the trees they do more harm than good. A considerable number of the worst placed and all deformed fruits should be removed at the same time, and where there are plenty of shoots these also may well be thinned. What is wanted is one good shoot at the extremity of each piece of young wood, and another as near the base as

possible, and on the upper side. The intermediate shoots to be thinned, reserving any near a good fruit, and if these are duly stopped at the third or fourth joint there will be sufficient leaves to nurse the fruit. Near the centre and stem of the trees especially as many young shoots should be laid in as there is room for, these eventually taking the places of worn out older branches. Very healthy trees are apt to form extra gross shoots, which, if preserved, rarely ripen properly, and in fact are very liable to spoil the trees. Pinch these back, or, better still, disbud or pull them out of their sockets, and if this is done early better shoots will start from the same bud—rank growth usually proceeding from triple wood buds. Green fly is plentiful, and this must be washed off either with the syringe or engine, using soapy water.

PEARS.—Where moderate numbers of flower trusses were formed on the trees a good set has resulted, but those very freely flowered have not done so well, the greater portion of the bloom having fallen and left but few fruit behind. The worst offenders in this respect are Duchesse d'Angoulême, Josephine de Malines, Glou Morçeau, Marie Louise, and Winter Nelis. Trees much exhausted last season in very many instances are only lightly set with fruit, and this ought to be a warning not to overcrop any that are well furnished with fruits this summer. The thinning ought to be timely and unstintingly carried out, all being sufficiently advanced to render it an easy matter to distinguish which are the best-formed. No clusters should be left, more especially in the case of such large varieties as Williams' Bon Chrêtien, Jargonelle, Marie Louise, Beurré Superfin, Pitmaston Duchess, Beurré Diel, Beurré Clairgeau, Louise Bonne of Jersey, Maréchal de Cour, Van Mons Leon Leclerc, Beurré Bachelier, General Todtleben, Easter Beurré, Ne Plus Meuris, Glou Morçeau, and Beurré de Rance, all of which should be grown to their full size, or otherwise the quality is not so good. The medium-sized and smaller varieties, notably Winter Nelis, Bergamotte Esperen, Josephine de Malines, Beurré d'Aremberg, and Ollivier de Serres, are, as a rule, heavy croppers, but unless freely thinned the fruit is small and flavourless, and it is much the same with numerous other Pears that could be named. In the case of the larger varieties, including those first mentioned, each cluster should, unless they are few and far between, be reduced to a single fruit, and where very thick they ought eventually to be still further thinned. As a rule the trees are not forming so much strong growth as usual, and it is advisable to prevent their wasting any of their apparently already impaired vigour. The lateral growths should therefore be freely thinned where at all thick, and that reserved stopped at the fifth or sixth joint. Closer stopping must not be resorted to, as this most probably would force fresh growth from buds that it is desirable should be converted into fruit buds, while if the growth is left unstopped till after midsummer this will necessitate the use of a pruning knife. Early stopping, in addition to favouring the fruit, also encourages the strong growth of the leaders where space has yet to be filled. Pyramids of medium or small size to be treated similarly to the wall trees, but large trees need not be touched at present.

MULCHING STRAWBERRIES.—Gentle rains have much benefited the Strawberries, and those mulched with strawy manure will not be dry at the roots for some time to come. Any not mulched ought to be attended to at once, this being necessary to enclose moisture, and also because it cannot be done so cleanly after the fruits are heavy and falling clear of the foliage. Before this is applied a good soaking of liquid manure should be given if possible, and the ground being already in a moist state will be in just the right condition to absorb the greater portion of the manure. Guano, soot, or other manures as previously advised may also be washed in with advantage, something of the sort being necessary where the plants have been on the ground more than one or two seasons. Directly after the watering has been given apply the mulching. Clean strawy manure is perhaps most generally used, and this, if not washed sufficiently clean before the fruit is ripe, may be further faced over with a thin layer of straw cut into 1-foot lengths. The latter alone is sometimes used; but though it keeps the fruit clear of the ground it does not sufficiently prevent the loss of moisture; and for this reason it is a good plan, failing strawy manure, to freely use short lawn grass by way of a mulch. This may be put on as fast as it is cut by the mowing machine, or better still a quantity may be cut with scythes from banks and other spots not mown very often; and the grass being duly dried or converted into hay is fit to use among Strawberries without a surfacing of straw.

STRAWBERRY SUPPORTS.—During a dull wet summer especially the wire supports as advertised and sold cheaply by different makers are simply invaluable, and they are of good service even in a season favourable to the proper ripening of the fruit. They prop up and expose the fruit to what sunshine there may be; they preserve it from the slugs, and admit of liquid manure being freely used about the plants without touching the fruit. For reasons just given, and also for preventing soil being splashed over the fruit, some kind of mulching must be given in conjunction with these supports. Those who may have a plentiful supply of strong old fencing wire may easily make a number of Strawberry supports. If wanted for fairly strong plants cut the wire into 3 feet lengths, turn down about 9 inches of each end, and form the centre into a half-circle, this being easily done with the aid of a strong hammer and circular block of wood. Two of these are required for each plant, one person holding up the leaves and fruit while the other thrusts the uprights or legs into the ground to a sufficient depth. A strong collar is thus formed round them quite capable of supporting the heaviest crops that may be produced.

FRUIT FORCING.

PEACHES AND NECTARINES.—*Earliest House.*—When the fruit is all gathered, or from individual trees, the wood upon which it has been produced should be cut away to the shoot at its base, which is to afford the bearing wood of next season, except if the fruit has been produced on wood that it is necessary to retain for the extension of the trees. All growths not absolutely necessary for bearing next season or the extension of the trees should be cut away, as it is important that the foliage be fully exposed to the influence of light and air, and it is equally important that it be kept healthful and die naturally. Employ the syringe freely, keeping the inside borders well watered, and the outside border must not be neglected if the weather be dry. All the air possible should be admitted, and when the buds are plumped, and the wood thoroughly ripened, the roof lights where moveable may be taken off.

Second Early House.—In gathering the fruit great care is necessary in handling it, as slight pressure is sufficient to spoil the appearance. Fruit for packing should be gathered before it is quite ripe, and all is better taken from the trees rather under than over ripe. Some netting suspended beneath the trees is useful to prevent fruits that fall from being bruised. Ventilate freely, leaving a little on constantly, and to ensure the necessary moisture so essential for the preservation of the foliage in health sprinkle the paths and borders in the morning and afternoon, not allowing the soil to become dry, but giving water as required to maintain it in a moist healthy state. A mulching of short spent material is very useful in preventing the surface cracking and the roots going down in quest of moisture. Syringing must cease directly the fruit commences to soften for ripening, or the moisture will cause the skin to crack and leave an unpleasant musty flavour.

Trees Started in January.—There is a great difference in the fruit ripening, not only as regards varieties, but in the treatment they receive. Sharp work is seldom good work. We have trees now that under ordinary forcing would have ripened the fruit early in the current month. The varieties are Early York and Royal George, with Elruge Nectarine. They have been brought on very gently and in accordance with the weather, which is later than usual in forwarding the crops, and as a consequence the fruit will be later by fully a month. This is as regards the size and quality of the fruit a matter of great importance. The fruit will when ripe be heavier, and its juices being more fully elaborated, be very much higher in quality. This we mention, as those that want quality must allow time for it. Mere size and even appearance—*i.e.*, colour, can be had, but there is no comparison of the fruit ripened in a high and moist, somewhat close atmosphere, and that finished in a well ventilated and naturally aided structure, no more artificial heat being employed than is necessary for the safety and gradual progress of the crop. There is the still further difference that the fruits in the stage of swelling prior to stoning attain to a much larger size, and they make more rapid progress after that process is completed, than those having more heat during the early stages. Then there is a difference again as to the time of month the trees are started, also as to the treatment of the trees during the resting period. Those that have fixed roof lights may, if the weather have been mild, have the buds advanced in swelling when the house is closed, whilst those that have been exposed will be fully a fortnight behind, assuming them to be started at the same time. Those are matters requiring notice in calculating the time the fruit is to be ripe. After stoning the fruits assume colour and flesh quickly; every attention should therefore be given the trees in watering either with liquid manure, or affording water through a good mulch of rather fresh short material. The shoots should be allowed to extend, not pinching the laterals in too closely, but they must be kept from shading the fruit, which must be raised with its apex to the fullest light. This can be effected by laths placed across and secured to the wires of the trellis. Continue forcible syringing morning and afternoon until the fruit begins ripening, then cease syringing, but do not allow the border and other surfaces to become parchingly dry, as moderate air moisture, provided the ventilation is liberal, will not injure the fruit, and it is absolutely necessary for the benefit of the foliage.

Trees Started in February.—The fruit of these is stoning. It has made very satisfactory progress, attaining to a good size, and to continue this there must not be any deficiency of moisture at the roots, and the foliage must be kept clean by daily syringings, and if necessary the prompt application of an insecticide. The temperature should be continued at 60° to 65° artificially, and a free circulation of air allowed between 70° and 75°, having it full when the latter is reached, and close at 75° with plenty of atmospheric moisture. If the temperature rise to 80° or 85° it will not do any harm, but admit a little air before nightfall, so as to allow the pent-up moisture to escape and the temperature to gradually cool through the night. Commence increasing the ventilation with the advancing heat from 65°.

Later Houses.—The failure of Peaches and Nectarines outdoors in many places this season owing to the frosts and prolonged cold will render those under glass particularly desirable, and it may be desirable to retard trees that under ordinary circumstances would afford a supply of fruit in advance of that from trees on walls, so as to prolong the season of supply. This is readily effected by a freer and lengthened ventilation during the day. There is only need to ventilate day and night to keep back the crop so as to ripen about the same time as that usually occurs with trees against walls, and by judicious ventilation the fruit may be had over a prolonged period. The crops under glass are abundant, but they are not stoning so well as could be wished, which is probably a consequence of the wood not being so well matured as would have been the

case had the preceding season been more favourable to the storing of aliment. It is necessary not to overburden the trees with more fruit in the early stages of growth than is necessary to remain for the crop, and a moderate crop is always better than a heavy one; therefore thin well in the early stages, leaving a few more only to meet casualties than will be required ultimately. Keep them well syringed, and mulch so as to keep the surface moist, thereby encouraging the roots to the surface, giving applications of water, and if necessary liquid manure.

PLANT HOUSES.

Kalosanthes.—Plants that have been kept moderately close for the past two months will be in full flower. Retard later plants by giving abundance of air; those not yet showing colour may be stood in a sheltered but northern aspect. It is surprising with a little management how long they can be kept back. There is no difficulty in having these effective plants in flower over a period of three months. They must have one clear season's growth, which, if well ripened, will be certain to produce flowers on every shoot. Those that flowered last year or were raised from cuttings should be in the pots in which they are intended to flower. They will do well in a compost of good loam, one-seventh of manure and sand. Press the soil into the pots firmly, and water carefully until they are rooting into it freely, when liberal supplies may be given. The plants must be exposed to full sunshine, and for a few weeks longer only need they be protected in cold frames. On fine days the lights may be thrown off and eventually the plants put outside. This treatment will insure dwarf firm growth that is certain to flower. If there are any growths on the plants now in flower or likely to flower that have missed, they should be taken off and rooted at once. They can be rooted singly in 3-inch pots, or four or five may be rooted in 5 and 6-inch pots and grown together. Much, however, depends upon whether the plants are wanted for flowering next year or the year following. If rooted at once, gradually hardened, and then grown with next year's stock, they will all flower; but if they are not wanted root them singly, and pinch out the points, which will induce them to branch, and four to half a dozen shoots will be produced for flowering the following season.

French and Fancy Pelargoniums.—Cuttings for flowering early next year should be inserted as rapidly as possible. Failure often results from striking hard flower stems late in the season instead of doing the work when good cuttings can be had in plenty. If firm sturdy shoots are selected they will root freely in any structure where a temperature of 60° can be maintained, provided the atmosphere is not too moist. When the earliest plants have flowered place them outside in a sunny position to thoroughly harden and ripen their wood. Those who want white flowers for cutting either for vases, bouquets, or sprays should grow a number of Volonté Nationale album, as its flowers are pure white, travel well, while the plant is of dwarf sturdy habit and one of the most profuse flowerers in this section. It will not strike so freely as some varieties unless the cuttings are moderately firm before they are inserted. Those intended for flowering late should be kept cool, but fully exposed to the sun. Do not pinch them after this date, or growths instead of flowers only may be the result. Those that are already showing their flower stems will bear liberal feeding, in fact in this stage they are much benefited by artificial manures.

Zonal Pelargoniums.—Pelargoniums intended for flowering during September and October are well established in their largest pots, and they can now be placed in a sunny position outside. Pinch their shoots as they need it, and remove all flowers as they appear for the next six weeks. Those intended to succeed them should be placed in their largest pots as rapidly as possible, or as they become ready. Place them in cold frames and keep them close for ten days, then gradually harden them and stand them outside. The same remarks apply to Ivy-leaf varieties. All for winter flowering must be potted firmly in 5 and 6-inch pots, which is the most suitable size. Use for a compost, loam one-seventh of manure and sand. With this treatment the plants will make firm sturdy growth that will ripen and flower well when required. Zonals may still be rooted, but these should be inserted in 3-inch pots and flowered in them. After they are rooted they must be prepared by placing them outside, the same as those in larger pots.

Celosias.—Seedlings may be placed in small pots and grown gently Be careful not to keep them too close, or they will run up tall and soft, and plants produced by such means are very liable to damp off during dull weather in November. Seed may be sown in gentle heat for the same purpose and grown on gradually afterwards in cold frames. Be careful not to allow them to become root-bound before they are placed in 5 and 6-inch pots. Celosias are amongst the most useful plants for furnishing purposes during the autumn and winter months.

THE BEE-KEEPER.

NOTES ON BEES.

SINCE my last notes were written we have had variable weather in the North. Six days in succession the night temperature was 35°, and the day temperature for four days rose to 70° Fahr.; the two following the day temperature was 45°, and has continued about other six days, with a night temperature of 38°. During these last-named six days the wind was high, accompanied by heavy showers of rain; altogether the severest weather of the kind I ever experienced at this season.

Some trees are almost denuded of their leaves, and more bees were lost in these few days than at any time during the whole year.

SWARMING.

Before the weather became so tempestuous some hives had swarmed, and many appeared to be on the eve of it, but they have cooled down now, and will have the loss to make up again before attempting to swarm. During the four fine days we had, and the only honey ones this season, strong stocks gained greatly in weight, but owing to greater consumption of honey in these strong hives, those that were nuclei at the end of September are as good, while the queens must be in a better state for keeping up egg-laying throughout the height of honey season, and will not be so liable to swarm at a time most undesirable.

While speaking of swarms, it may be well to mention a little thing which tends to insure the safety of a swarm having a few combs when sent by rail to a distance with no one in charge. The plan has always been adopted by me when in charge of the bees, but it was the late Mr. T. W. Woodbury who first put it into practice. When that gentleman sent out Ligurian stocks he gummed a printed label across the frames reading, "Please let this line run across the rails." When honey and bees are otherwise properly packed, and having the ends of the combs towards the engine, and the line placed across the combs, any jar they may receive will not injure them so readily as if they ran in the opposite direction When upon a spring vehicle the position ought to be changed. I observe that an American has hit upon the same plan.

FERTILE WORKERS AND QUEEN-REARING.

During the fall of 1887 I put right for the winter a hive having a Carniolian queen about four years old, not with the intention that it would survive and come out strong in the summer, but for the purpose of raising queens from it to join the hives that had swarmed. Like my other stocks, this one commenced breeding in December, and from the appearance of the queen, which I found dead in March, she must have died in February. One queen cell was visible where a queen had been hatched, but was also lost. The bees, however, wrought well, their mournful hum only betraying the absence of a queen. During the month of April I gave a piece of brood comb containing eggs and larvæ, so that a queen or more might be raised therefrom. This was done after I satisfied myself that there was no queen, and I could not detect any signs that a fertile worker was present. The bees, however, refused to raise a queen. About the middle of May I observed some eggs, which the bees immediately began to raise royal cells round. These were destroyed and fresh worker brood added, but to no purpose. Royal cells were continually being raised containing the eggs of a fertile worker, while the worker eggs were simply taken care of and nursed towards maturity. This state of matters continued for about three weeks, when I removed the combs containing the eggs of the fertile worker to another part of the hive and added still more worker brood. After this a rather remarkable thing occurred. The bees commenced and enlarged a cell which had neither the appearance of being a queen, worker, nor yet the cell of a drone. Of the three, however, it most resembled in colour that of a queen cell. The larva which I could see distinctly through the tumbler, and which was now approaching the pupa state, had the appearance of a queen more than that of a worker or drone, but its body seemed extra long. This cell, after it was sealed some days, was destroyed by the bees, and a royal cell proper has been raised containing a queen.

There is something yet to be learned about these fertile workers,

and the obstinacy of the bees to accept a queen or to raise a queen from worker eggs when a fertile worker is present amongst them. Although we cannot solve all these mysterious phenomena, I think it may be safely said that bees do not think, or they would act differently from what they do in many ways. Their virtues and good qualities must be attributed to instinct.

STOCKS FOR NEXT SEASON.

During the next six weeks attention should be given to selecting queens and forming nuclei for next year's stocks. There is no rule to guide bee-keepers how to select the best queens. So far as man knows he is at fault here if he pretends to know either a cell or queen that will surpass normal ones that have gone before or to fall short of them. Much has been written on this subject, both on the selecting of the cells and queens, which would have been as well left unsaid. My advice is, if a queen is undersized, or if a royal cell is smooth having little wax expended on it, destroy it, and if you have a choice of a thin but longish queen or a short thickish one, select the latter.—A LANARKSHIRE BEE-KEEPER.

TO CORRESPONDENTS

*** All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Laburnum (*W. S.*).—We have received the branch bearing yellow and reddish purple flowers, and have seen hundreds similar. The tree is Cytisus Adami, which originated from a bud of C. purpureus inserted in C. alpinus by C. Adam, a nurseryman at Vitry, near Paris, in 1825. The yellow flower on the branch is C. alpinus.

Luxuriant Peach Trees (*R. W.*).—We only received your letter just as we are going to press. The specks are not caused by insects. The growth is so exuberant that the leaves cannot elaborate the sap. Admit all the air practicable, and employ no more moisture than absolutely necessary for cleanliness. In the autumn carry out your proposition, which is practically in accordance with the advice given to a correspondent on page 456 last week.

Plunging Chrysanthemums (*T. B.*).—A categorical reply cannot be given to your question. We know of so-called Vine borders in which Chrysanthemum pots might be plunged a few inches deep without injuring the Vines, because practically all the fibrous or food-imbibing roots are outside the space originally provided for them; but we should not like to plunge "Chrysanthemum pots all over a border" that is filled with the fibrous roots of Vines.

Narcissus Buds Withering (*C. B. M.*).—It is not uncommon for some of the buds of the Poet's Narciss, and especially of the beautiful double variety, to shrivel. Whether those from the stronger bulbs open in your case, and those from the weaker fail, we have no means of knowing, but that is so in some cases. It will probably be a good plan to dig up the bulbs when the leaves have turned quite yellow, sort them into sizes, and plant them in rows or groups in deeply dug and enriched ground as soon as convenient afterwards. It is not desirable to keep them out of the ground very long, nor to dry them in the sun.

Tobacco Cloth (*C. W.*).—This varies in quality, and we have found some more effectual in destroying insects and less deleterious to vegetation than others. As we cannot undertake to subject articles that are sent to us to analysis, and as an inspection is insufficient for determining the quality of tobacco cloth, your experience must have greater weight than the expression of an opinion under those circumstances. Tobacco cloth and paper should only be purchased from vendors of repute, who guarantee it safe when properly used.

Hyacinths Failing (*G. F. B.*).—You omit to state one important matter in your letter—namely, the time when the bulbs were planted, and possibly this may have had something to do with the result. We have seen whole beds fail from late planting if the bulbs had not been kept in a suitable place. Old bulbs will often prove unsatisfactory in the same way, and sharp frosts or keen winds when the leaves or flowers are showing cause similar injury. We have examined the bulbs sent, but can find nothing in their condition to account for their failure.

Narcissi not Flowering (*Cambridge*).—When the flowers are cut immediately they open, or almost before, for they expand readily in water, the leaf growth is stronger and the bulbs much better supported than can possibly be the case when the flowers remain to form seed pods, and these left till the growth withers. This is common in many gardens, though possibly not in yours, and expert growers take care not to make such a mistake. You had better take up the bulbs, sort and replant them as is advised in a reply to another correspondent.

Moss in Watercress Beds (*C. M. B.*).—An extensive Watercress grower who has been consulted on the subject says he is sometimes bothered with the same kind of moss, especially in newly dug beds. He attributes this to the poverty of the soil, and the only remedy he has for destroying it is to clean all out and start afresh, using plenty of good rich soil to plant in. You can check the progress of the moss now by occasionally drawing a birchbroom lightly through the water, and by following the above example you will have better results next time.

Thinning Victoria Plums (*F. J.*).—The fruit should be thinned in proportion to the vigour of the tree. If very vigorous it will bring to perfection more fruit than were it only moderately so, and more if moderately vigorous than weak. Two or three fruit would be sufficient to leave on each cluster, in order to have them a good size and to finish satisfactorily, and about two such, or half a dozen fruit to each square foot, would be an ample crop. We should not, however, thin too severely at first, but allow the fruit to swell freely before reducing it to the quantity required for the crop, and it is best done gradually, a few at a time or each day in preference to removing a large quantity at once, leaving a few more than will be required to meet casualties.

Grass Edging (*Idem*).—We do not know of anything you could plant along the grass edging that would keep it from crumbling down, unless it be Yarrow, which succeeds admirably on a light soil, and keeps green in the driest weather. Lotus corniculatus minor is also excellent. We fear they would be difficult to establish on the edge of the turf, but the seed might be inserted on the top, and growing plants would soon spread so as to give a good edging, especially the Yarrow.

Tree Carnations (*Shenley*).—These Carnations do not "damp off and the leaves become brown before the plants attain any size," if properly managed. If you had described the treatment of your plants or cuttings we could perhaps have indicated where you erred. Stout healthy cuttings are essential to begin with, and these strike in sandy soil in a close case or frame, or under bellglasses, but the moment they are rooted, and fresh leaves show signs of growth, they must have full exposure, and all the light and air possible for insuring sturdy growth. It is well to strike them in separate 2-inch pots, as then they can be transferred to larger without breaking the roots, shifting them when roots are seen through the drainage, and using turfy loam with a sixth part of decayed manure and a little bruised charcoal, potting firmly. A cold frame is suitable for them at this season, with the sash drawn off day and night in fine weather when the plants are in free growth. They are often drawn and spoiled in greenhouses during the summer, and damp off if kept too close when young. Light greenhouses are suitable for them in the winter. There is no pamphlet such as you appear to desire, but a practical work on florists' flowers can, we think, be obtained from Mr. James Douglas, Great Gearies, Ilford. The spray you send is of Cerasus Padus, the Bird Cherry.

Plants for the Conservatory (*W. S. S.*).—You could have Achimenes in good condition throughout the months of September and October. To do this you should keep a few old plants, and take cuttings from them. The old plants could be grown in your vineries. The cuttings should be inserted in 5 and 6-inch pots, and would root quickly in the stove, and could then be grown in the lean-to house. Gloxinias would be useful raised from seed sown in February or even in March; also Begonia Knowsleyana, B. Ingrami, B. Carrieri, and the whole of the B. semperflorens section. The tuberous kinds would also do service then if the tubers were started late. For the last month Bouvardias could be had, Salvia splendens, Heliotropes, Mignonette, and Rhodanthes, which take about three months to come into flower from the time the seed is sown. Early flowering Chrysanthemums in variety could be had in quantity—for instance, Madame Desgrange and its golden form G. Wermig, La Vierge, as well as several others that flower earlier than these. Zonal Pelargoniums, single and double, as well as Ivyleaf varieties, are invaluable for flowering during those months. Abutilons, Petunias single and double, Fuchsias, Lilium lancifolium rubrum and album can be had then; so can Primulas in quantity, both the varieties of sinensis and P. obconica. Cyclamens may be had in flower in October, and Roman Hyacinths after the middle of the latter month.

Banana Culture (*A Subscriber.*)—The chief essentials for growing Bananas are light, lofty, well heated houses, rough rich soil, and abundance of water. The plants may be fruited in large tubs, but they

do not grow nearly so vigorously as when planted out, nor produce such large clusters of fruit. We have not seen Musa Cavendishi better grown than by Mr. J. Ollerhead in Sir Henry Peek's garden at Wimbledon House. Stout young plants, or rooted suckers about 2 feet high, were planted in the spring, and huge clusters of fruit were cut from them about Christmas. One of these, we think, weighed upwards of 90 lbs. They were grown in very rough, rich, turfy loam, and we think had the advantage of slight bottom heat, while enormous quantities of tepid water were given during their growth. In August the stems were considerably more than 2 feet in circumference, the leaves magnificent, and the fruit clusters showing. The temperature of the house ranged from 75° at night to 90° in the day with sun in summer, and a moist genial atmosphere maintained. We have cut a cluster of fruit weighing 30 lbs. from a plant in a tub 3 feet in diameter, sunk in a bed of leaves, in a temperature ranging from 65° at night to 85° with sun. In the winter, when the plants are resting, a temperature of 60° to 70° suffices. If you mix one part of decayed manure and the same of leaf mould with five parts of good and very turfy loam, Musas will grow freely in it if afforded adequate supplies of water and a temperature between 70° and 90° is maintained.

Stopping Fig Shoots (*A Subscriber*).—Very vigorous growth is not a good indication of fruitfulness. Either the border is too large or it is composed of too light, rich, and open material. Fig trees are best with the roots confined to a somewhat small border composed of good loam with a free admixture of calcareous and siliceous matter, such as old mortar rubbish and road scrapings, any manure that may be needed being applied to the surface or in liquid form. Shoots that have reached the top of the house or trellis should be pinched 9 inches from the extremity, which will cause them to push fruit from the joints below, also on the young growths resulting, these latter to be pinched at the fifth or sixth leaf. These extremity growths require to be cut out after they have fruited, or, if not fruited, they should be cut out so as to give place to those succeeding, thereby keeping up a succession of bearing wood throughout the trees. Side shoots not required for laying in should be pinched at the fifth or sixth leaf so as to form spurs, which usually fruit freely, but they must not be trained in too abundantly, as it is very important that the wood be thoroughly exposed to light and air for its solidification, for on which its fruitfulness depends. With the trees in full leaf, the temperature should be kept at 60° to 65° at night, 70° to 75° by day, ventilating from 70°, and maintaining a temperature through the day from sun heat of 80° to 85°, closing between those degrees so as to raise it to 85° or 90°, having plenty of moisture in the house, which will be obtained by forcible syringing, so as to keep the leaves free from red spider. The top ventilators should be slightly opened before nightfall, so as to allow of the pent-up moisture escaping.

Infested Apple Trees (*Thorn Heys*).—The leaves arrived much dried and shrivelled and no insects could be detected. Have not some of the leaves been injured by petroleum? This, when used, should always be applied in the evening, soon enough for the trees to dry before night; applied in the morning and hot sun following, the leaves are almost sure to be scorched. We suspect your trees have been attacked by the small Ermine moth, the caterpillars of which are highly destructive to the leafage and blossom of Apple trees. Miss Ormerod, in her manual on injurious insects, says:—"The female lays her eggs in roundish patches on the small twigs, and covers these patches with a kind of strong gum, which is yellow at first, but gradually changes to a dark brown, so as not to be easily distinguishable from the brown twigs. The eggs may be found hatched by the beginning of October, but the caterpillars (which are then little yellow creatures with black heads, and only about half a line long) remain sheltered under the patch of gum during the winter, and do not come out till the leaves begin to unfold in spring. They then burrow into the young leaves and feed on the soft matter within, until they are strong enough, when they come out from their minings and thus make their appearance suddenly in large numbers where none have been noticeable before. When full fed each caterpillar spins a light cocoon in which it changes to the chrysalis inside the general web. The moths, which comes out towards the end of June, are about three-quarters of an inch in expanse. The fore wings are usually livid or whitish, dotted with black; the hind wings livid or lead-colour. It has been observed that the whole brood of moths usually hatch from the chrysalis at the same time, when their light colour makes them easily seen, and they are sluggish by day; it has therefore been found useful to spread a sheet under the tree, and by beating or shaking the boughs make the moths fall into the sheet and destroy them. Fish oil, or petroleum and softsoap, is an application that can be used, and good drenchings are of service in clearing the trees of moths when they are hatching out of the chrysalids, and in dispersing the caterpillars." You did not commence action soon enough. A solution of hellebore made by dissolving 2 ozs. of powder in a gallon of water also destroys the caterpillars. The mildew is the consequence of vitiated sap, the result of injury to the leaves.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*A. B.*).—Since we state that "flowering specimens are necessary for naming flowering plants," is it not strange that you should have waited just till the trees from which you send sprays ceased flowering? It is possibly an Amelanchier, but you had better send flowering specimens next year. (*H. A.*).—Philadelphus mexicanus. (*M. R. S.*).—1, Arenaria balcarica; 2, Erinus alpinus; 3, Sempervivum arachnoideum. (*P. T.*).—1, Oncidium Jonesianum; 3, Senticaria Hadweni; 3, Maxillaria grandiflora; 4, Masdevallia Harryana. (*R. P. & Sons*).—We think your plant is a very distinct variety of Cattleya Mossiæ, the sepals and petals highly coloured, and the lip beautifully veined with gold, but the flower is not of such good shape as some we have seen.

COVENT GARDEN MARKET.—JUNE 6TH.

SUPPLIES good, with business much improved, and prices firm.

VEGETABLES.

	s.	d.		s.	d.		s.	d.		s.	d.
Artichokes, dozen	1	0	to	2	0	Lettuce, dozen	0	9	to	1	3
Asparagus, bundle	1	0		4	0	Musbrooms, punnet	0	6		1	0
Beans, Kidney, per lb.	1	6		0	0	Mustard and Cress, punt.	0	2		0	0
Beet, Red, dozen	1	0		2	0	Onions, bunch	0	3		0	0
Broccoli, bundle	0	0		0	0	Parsley, dozen bunches	2	0		3	0
Brussels Sprouts, ½ sieve	0	0		0	0	Parsnips, dozen	1	0		0	0
Cabbage, dozen	1	6		0	0	Potatoes, per cwt.	4	0		5	0
Capsicums, per 100	0	0		0	0	,, Kidney, per cwt.	4	0		0	0
Carrots, bunch	0	4		0	0	Rhubarb, bundle	0	2		0	0
Cauliflowers, dozen	3	0		4	0	Salsafy, bundle	1	0		1	6
Celery, bundle	1	6		2	0	Scorzonera, bundle	1	6		0	0
Coleworts, doz. bunches	2	0		4	0	Seakale, basket	0	0		0	0
Cucumbers, each	0	4		0	7	Shallots, per lb.	0	3		0	0
Endive, dozen	1	0		2	0	Spinach, bushel	1	6		2	0
Herbs, bunch	0	2		0	0	Tomatoes, per lb.	1	0		1	3
Leeks, bunch	0	3		0	4	Turnips, bunch	0	4		0	0

FRUIT.

	s.	d.		s.	d.		s.	d.		s.	d.
Apples, ½ sieve	0	0	to	0	0	Oranges, per 100	4	0	to	9	0
Nova Scotia and Canada barrel	10	0		18	0	Peaches, dozen	6	0		12	0
Cobs, 100 lbs.	45	0		0	0	Pears, dozen	0	0		0	0
Grapes, per lb.	2	6		5	0	St. Michael Pines, each	3	0		5	0
Lemons, case	10	0		15	0	Strawberries, per lb.	2	0		5	0

PLANTS IN POTS.

	s.	d.		s.	d.		s.	d.		s.	d.
Aralia Sieboldi, dozen	6	0	to	12	0	Fuchsia, dozen pots	6	0	to	12	0
Arbor vitæ (golden) dozen	12	0		24	0	Genista, per dozen	6	0		12	0
Arum Lilies, dozen	6	0		12	0	Heliotrope, dozen pots	6	0		9	0
Bedding out plants in variety, per dozen	1	0		2	6	Ivy Geranium	4	0		8	0
Cineraria, dozen	0	0		0	0	Hydrangea, dozen	9	0		18	0
Coleus, dozen	3	0		6	0	Lilies Valley, dozen	12	0		18	0
Cyclamen, dozen	12	0		18	0	Lilium Harrisii, doz. pots	30	0		42	0
Deutzia, per dozen	6	0		9	0	Lobelia, per dozen	4	0		6	0
Dracæna terminalis, doz.	30	0		60	0	Marguerite Daisy, dozen	9	0		12	0
,, viridis, dozen	12	0		24	0	Mignonette, per dozen	4	0		8	0
Erica, various, dozen	9	0		18	0	Musk, dozen pots	2	0		4	0
,, ventricosa	18	0		24	0	Myrtles, dozen	6	0		12	0
Euonymus, in var., dozen	6	0		18	0	Nasturtiums, per dozen	4	0		6	0
Evergreens, in var., dozen	6	0		24	0	Palms, in var., each	2	6		21	0
Ferns, in variety, dozen	4	0		18	0	Pelargoniums, dozen	6	0		18	0
Ficus elastica, each	1	6		7	0	,, scarlet, doz.	3	0		6	0
Foliage Plants, var., each	2	0		10	0	Spirea japonica, doz.	6	0		12	0
						Stocks, per dozen	3	0		6	0

CUT FLOWERS.

	s.	d.		s.	d.		s.	d.		s.	d.
Abutilons, 12 bunches	2	0	to	4	0	Mignonette, 12 bunches	3	0	to	6	0
Anemones 12 bunches	1	6		4	0	Narciss, various, 12 bchs	2	0		4	0
Arum Lilies, 12 blooms	2	0		4	0	Pansies, 12 bchs	1	0		2	0
Azalea, 12 sprays	0	6		1	0	Pelargoniums, 12 trusses	0	6		1	0
Bouvardias, bunch	0	6		1	0	,, scarlet, 12 trusses	0	4		0	6
Camellias, 12 blooms	1	0		3	0	Polyanthus, 12 bchs	1	0		3	0
Carnations, 12 blooms	1	0		3	0	Ranunculus, doz. bunches	2	0		4	0
Cowslips, 12 bunches	0	6		1	0	Roses, Red, 12 blooms	1	6		4	0
Cyclamen, 12 blooms	0	4		0	6	,, (indoor), dozen	0	6		1	6
Daffodils, Double, 12 bchs	0	0		0	0	,, Tea, dozen	1	0		2	6
,, Single, 12 bchs	0	0		0	0	red, dozen (French)	0	0		0	0
Daisies, 12 bunches	2	0		4	0	,, yellow	2	0		4	0
Epiphyllum, 12 blooms	0	0		0	0	Spiræa, bunch	0	6		1	0
Encharis, dozen	2	0		4	0	Stephanotis, 12 sprays	1	6		3	0
Gardenias, 12 blooms	1	6		4	0	Stocks, 12 bunches	1	6		4	0
Lapageria, coloured, 12 blooms	1	0		1	6	Tropæolum, 12 bunches	1	0		2	0
Lilium longiflorum, 12 blooms	2	0		4	0	Tuberoses, 12 blooms	0	6		1	0
Lily of the Valley, 12 sprays	0	6		1	0	Tulips, dozen blooms	0	2		0	4
Lily of the Valley, 12 bunches	3	0		6	0	Violets, 12 bunches	0	0		0	0
Marguerites, 12 bunches	2	0		6	0	,, (French), bunch	0	0		0	0
						,, (Parme), bunch	0	0		0	0
						Wallflowers, 12 bchs	2	0		4	0
						White Lilac, per bunch	0	4		0	6
						,, ,, French	3	0		5	0



THE BRITISH DAIRY FARMERS' ASSOCIATION.

EXCURSIONS AND CONFERENCES IN EAST ANGLIA.

IT was at a general meeting held in March, 1886, that the members of this Society resolved to hold an annual conference at some place or places in the provinces. In the following June the first gathering took place in Cheshire, which, as the leading

dairy county, did well to set so good an example. This was followed by visits to Derbyshire and Ireland, the latter being especially successful; and this year, in the fourth week of May, came a visit of the Association, extending over four days, to the great corn-growing district of East Anglia.

On the first day there was a butter-making contest in the Drill Hall at Ipswich, with both local and open classes, of which it is worthy of remark that all the prizes were awarded to butter made in end-over-end churns. Cream for the contest was supplied from local dairies, so that the competitors were upon a footing of equality as to quality of cream, and though prizes were awarded for skilful manipulation of the butter, yet Professor Long, the Judge, remarked subsequently of this Suffolk butter that it was as poor as could be, while at Norwich he found as good butter as anyone could desire.

During this contest Mr. W. H. Lynch of Ontario, Canada, gave an address on butter making, in which especial stress was laid upon four essential points :—1, The removal of all the butter milk. 2, The preservation of the grain, injury to which affected the flavour. 3, Even and properly salting. 4, Uniformity in quality. Then came a conference in the Council Chamber of the Town Hall, at which Mr. H. A. Howman of Tame Hurst, Kingsbury, Tamworth, read an appropriate paper on Dairy Farming in Arable Districts, and the remainder of the day was devoted to an excursion by water to Woolverstone Park Dairy.

On each of the following days the programmes were full—in point of fact they were too full, and on the last day there was such a multiplicity of engagements that the short intervals allowed at each halting place detracted from the pleasure of the meeting very much. Without giving the whole itinerary, we may mention visits to some of the best herds of Red Polls, to the Duchess of Hamilton's Pound Farm Dairy at Glenham with its herd of some fifty choice cows, its model cowhouse, and elaborate steam apparatus for driving the Laval Separator, the churn, as well as machinery for the preparation of the cows' food. Then to Easton Hall, then to Albert College, Framlingham, where a paper was read by Dr. W. A. Elleston of Ipswich on "Milk." Next to Bury St. Edmunds, where, in the Constitutional Hall, Professor J. Wortley Axe read an important paper on "Parturient Apoplexy," which though highly technical was much appreciated, and was followed by a practical discussion calculated to do much good. This paper was certainly the most valuable of all. Then came excursions to Ickworth Park, Carrow Abbey, the Whitlingham Herd and Dairy, followed by a conference in the Agricultural Hall, Norwich, where Professor James Long read a paper on "Profitable Summer Farming." This, too, was a valuable paper, wherein Professor Long endeavoured to show that forage cropping and stall feeding produce a better result than grazing. He gave tables illustrating how much of each crop would keep a cow for six months, the result being that 100 acres of good grazing, and the same area of Clover or Tares, would keep 100 head of stock, while the powers of maintenance of other crops on the 100 acres were Trifolium, eighty head; Lucerne, 200; Sainfoin, 117; Rye Grass, 188; Rye, 117; Maize, 163; Sorghum, 160; and Cabbage, 133. The farther advantage claimed for such temporary crops over pasture was the inestimable value that they could be removed and succeeded by others. For this reason their value was almost double that shown in the figures.

The excursions throughout East Anglia culminated in a visit to Sandringham, where a pleasant surprise awaited the visitors in the presence of the Princess of Wales and the Princesses Louise, Victoria, and Maud. Many of the visitors went round the cow stalls with the Princess, who pointed out some of her favourites, and luncheon was subsequently served to some 200 guests in a spacious marquee near the dairy, the chair being taken by Sir Dighton Probyn.

Of the value of such meetings we can bear pleasant testimony, for we took some part in them, and derived much pleasure from the keen discussions of points of interest in matters affecting dairy farming, which were constantly taking place. Men of mark, leaders in dairy farming were there from all parts of the country, and many of them were frank and outspoken with words of encouragement and advice. "Do not despair if you have a few failures," said one of them in a genial after-dinner speech, "I turn out upwards of 10,000 Stilton cheeses from my dairy every year, yet when we began neither I nor my wife had ever made a cheese." Suffolk cheese, though very much a thing of the past, was so bad that it is still a byword. "Why!" said Alderman Ridley at the dinner at Bury St. Edmunds, "the very dogs used to bark at it, but"—with a chuckle—"they could not bite it!" It was with regret that we heard the worthy Alderman go on to remark that very much of the butter sent into Bury now by farmers was not worth more than from 7d. to 9d. per pound. Can we wonder that such farmers declare that dairy farming, even in their small way, does not answer?

WORK ON THE HOME FARM.

Complaints of drought and cold are frequent; every change of wind is followed with anxiety, for upon the weather of the next few weeks depends the success or partial failure of many of the crops. A warm, dripping June would indeed prove a blessing, as in point of fact will the dry cold weather of the end of May, for has it not enabled us to grapple with our foul land as only such weather could do? Plough, harrows, rollers, have indeed done good work, because they have been freely used throughout the spring onwards to the present time. They must, however, be used with judgment, even under such favourable conditions, for when land is very foul with couch grass it requires to be left sufficiently long after each ploughing and stirring for the small pieces of grass root to die. For example, a farm which came upon our hands last Michaelmas had thirty acres which had been under a long fallow, and which was therefore presumably clean. We decided to sow it with Wheat, and after the drill and harrows had been used for that purpose we found many grass roots brought to the surface still alive. Now, we had in the valuation of this farm paid for a given number of ploughings upon the understanding that they had been done at proper intervals of time during the past summer; but we found that three of the ploughings had been done quickly without such intervals, and consequently the land was not left in as clean "summerland" ought to be. The reason of such hurried, improper ploughing was a want of horses to use for it at the proper time, and as the tenant was leaving the farm he would not be a sufferer from such bad practice.

Both Mangolds and Swede plants are now well above the surface, and the horse hoe has already been used to stir the soil well between the rows. The Swedes are wonderfully free from insects, and with some rain we hope for a full crop. Of white Turnips we do not require early roots, but the land is almost ready for sowing, which will be done in due course in favourable weather. Maize should now be sown in sufficient quantity both for use in autumn and for silage. The land should be rich in fertility in order to have a full crop, and care must be taken to keep off rooks, or they will uproot the whole of the seed. There is nothing for it but to have a boy in each field to keep them off, and it is surely worth while doing this to save so valuable a crop, which, if well planted, absolutely revels in a hot, dry summer, and gives us twenty times the bulk per acre of any other green crop.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				
1888. May and June.	Barometer at 32° and Sea Level.	Hygrometer. Dry.	Hygrometer. Wet.	Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature. Max.	Shade Temperature. Min.	Radiation Temperature In sun.	Radiation Temperature On grass	Rain.
	Inches.	deg	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 27	30.021	52.8	47.3	S.E.	54.4	62.6	38.4	9.4	31.2	—
Monday..... 28	29.744	57.7	52.5	N.E.	53.8	63.8	41.6	106.5	34.9	0.010
Tuesday 29	29.949	51.4	47.2	E.	54.2	61.3	45.7	98.2	42.8	0.202
Wednesday.. 30	29.719	59.9	53.6	S.W.	54.7	65.3	49.7	113.6	48.2	—
Thursday.... 31	29.945	55.8	48.7	S.W.	54.4	65.6	46.3	119.9	46.7	—
Friday 1	30.236	59.4	51.1	N.W.	55.2	68.9	44.8	119.2	42.4	—
Saturday 2	30.269	63.6	55.6	S.E.	56.7	79.1	53.7	126.0	48.6	—
	29.980	57.2	50.9		54.8	66.7	46.0	110.7	44.3	0.212

REMARKS.

27th.—Rather misty all day.
28th.—Hazy morning, cloudy afternoon, spots of rain in evening and night.
29th.—Frequently cloudy, but with a good deal of sun in the middle of the day; solar halo in afternoon; rain at night.
30th.—Variable morning, with a slight shower at noon; bright afternoon.
31st.—Generally cloudy in the morning; bright afternoon and evening.
1st.—Bright and fine morning; afternoon generally cloudy.
2nd.—Cloudy till 11 A.M.; bright afternoon.

Temperature gradually rising throughout the week. A frost on grass on Sunday morning, and on the following Saturday 79·1° in the shade and 126° in the sun. Very little rain except during the night between Tuesday and Wednesday.—G. J. SYMONS.

COVENT GARDEN FÊTE.

SOME weeks ago it was proposed by Mr. Howard, of Southgate, that an evening Fête should be held in the Covent Garden Flower Market for the benefit of the Gardeners' Orphan Fund, and as the idea at once received the hearty support of the Committee, the market authorities, and the growers, the project speedily developed into one of considerable importance. By arranging the Fête for Wednesday evening, the 6th inst., it was only necessary for the market growers who occupy the 370 stands for plants and flowers to bring in their wares an hour or two earlier than usual, the following being a market morning. This they readily agreed to do, and they entered into the spirit of the idea with most commendable energy, arranging their plants as effectively as possible upon the formal stages devoted to that purpose. No charge was made for admission, but large numbers of tickets were distributed free, and collecting boxes were placed at intervals throughout the building, to which the visitors voluntarily contributed, and it is highly satisfactory to learn that a sum of £227 was thus collected, including a handsome gift of £100 from the Duke of Bedford.

When the Market was opened to the visitors at 9 P.M. it presented a novel and brilliant spectacle, and never has this portion of Covent Garden been seen under such favourable circumstances. Every available space was filled with flowering plants of the richest and most varied colours, with groups of Ferns at intervals to relieve the preponderating brightness, and if it had been possible to obtain a general view of the whole market at once it would have had a wonderful effect. There were six avenues between the stands besides the end avenues, and each of these was a floral exhibition of a remarkable character, for the growers had not only brought freely from their stores, but they had also brought some of the best examples of their cultural skill. Beautiful and interesting as this Market always is, its appearance on ordinary occasions was far surpassed at the Orphan Fête, and it was estimated that the total value of the produce was something like £10,000, which must be considerably above the average. Buyers, no doubt, recognised their chances, and a most successful sale was held the following morning, nearly the whole of the enormous quantity of plants and flowers being cleared out before 9 A.M. on Thursday.

The Fête was visited by some thousands of persons, including many of the nobility, and the avenues were so densely crowded for two hours that locomotion was exceedingly difficult, and it was impossible until after that time to take a leisurely survey of the Market. The discomfort was partly caused by having two entrances near together, the streams of people converging into a third avenue a short distance from the doors, which for some time occasioned a rather serious block. In other respects the arrangements had been carefully made, the Market was well lighted, and an excellent band was provided, so that, with the exception of the crowding, the visitors could spend a pleasant hour in traversing the half dozen alleys or avenues through banks of plants and flowers.

The stands are upright wooden erections with three broad shelves, and all these, including the ground space in front, were closely packed with the specialties of the various growers; masses of the brightest scarlet Pelargonium alternating with golden Calceolarias, graceful Fuchsias, and the bluest of Lobelias, from which the eye turned with relief to cool fresh banks of Ferns or Palms, the elegant fragrant Lilium candidum, or what was clearly in the majority, the Marguerites, or varieties of the Chrysanthemum frutescens. The latter constituted the most conspicuous plants in the Market, and it was surprising to see such fine healthy bushes covered with their white flowers in 48-size pots, while some specimens in a somewhat larger size assumed quite arboreal proportions. There is no question about the popularity of the Marguerites, and an enormous number must be grown, smaller plants than those named being employed in thousands for the window boxes of houses in the West End of London.

Pelargoniums of the Zonal, Show, and Decorative varieties were magnificent, and very rarely can these plants, especially of the last-named type, be seen so well grown as those brought into Covent Garden for sale at this time of year. They are grown on the rapid principle, for no time can be lost in market gardens, the space and labour are too costly, but the plants are sturdy, compact, vigorous examples, with dense heads of large richly or delicately coloured flowers, such as will endure the conveyance to market and some rough usage in the house decoration for which they are mostly purchased. Few varieties are grown, but these are selected for their combination of good qualities. Clear well marked colours, substantial durable flowers, and compact habit, are the points looked after, the finer qualities that commend themselves to the florists cannot be regarded.

Hydrangeas afforded another feature, the plants having huge heads of pink or blue flowers, over a foot in diameter, in small pots like the Marguerites, most telling in groups of foliage plants, and useful for the decoration of recesses in rooms. In marked contrast to these were the graceful specimens of Saxifraga pyramidalis, which were admirably represented on the Fête night, and this plant has evidently become a great favourite within recent years. The majority of those sent to the Market had many branched conical panicles of small white flowers, 2 feet or more high, arising from a neat rosette of leaves, 60 and 48-pots being the sizes employed. A year or two since much attention was called to these plants by the groups sent from the Royal Horticultural Society's gardens at Chiswick to the South Kensington meetings, and under the name of S. nepalensis it is also occasionally seen in gardens. As an easily grown plant of exceptional beauty at this time of year it is worth the attention of all who have large conservatories to fill, and it is abundant in nurseries now.

Charming little bush Heaths of the Erica ventricosa varieties were numerous, Roses in pots, Pansies of surprising size, Spiræas and Petunias, all occupied considerable space. Rhodanthes in thousands and Lilies comprised the chief of the plants in pots, but there were a few groups of a choicer character, consisting of Ferns and Orchids, for some of the latter plants have now become recognised as possessing "market value" amongst some purveyors.

One of the characters of market plants that strikes a horticulturist who seldom visits Covent Garden is the uniformity of quality prevailing. Inferior produce has no chance of commanding a sale, and growers soon find that out. The most successful are those who have taken up the culture of any class of plants coming into popularity, and giving them their best care, have made them specialties, at once commanding the attention of buyers. The selection or raising of improved varieties has also helped some men considerably, while throughout good culture is essential. There is no room for the laggards and the lazy, it is a smart contest between wits and energy in market work.

The cut flowers included hundreds of boxes of Roses, Irises, Forget-me-nots, Pelargoniums, &c., but as might be imagined the effective portion of the display depended mainly upon the plants in pots. The cross avenues, which are open on ordinary market days, were closed with groups of large Palms and Ferns, and in the recesses so formed were the collecting boxes, presided over by twenty-eight young ladies who had volunteered their services in

the cause of the Fund. Altogether the Fête was novel in character; so interesting, so brilliant, and so successful, that many have expressed a wish that it may become an annual event.

DIGGING AND STIRRING THE SOIL.

The due performance of these well-known cultural operations demands no great mental capacity, yet they require a certain amount of knowledge and the exercise of judgment. Digging is not learned all at once, neither is hoeing, but "practice makes perfect," and that is the reason why the gardener's apprentice serves the kitchen, weeds, learns to hoe and rake, and takes a turn at digging and trenching, which gives him an idea of the requirements of an establishment and the means by which they are met. Initiation into work of this description is of primary importance, and instead of being derogatory to the gardener it is of great value, in fact, indispensable.

Digging.—According to the dictionaries—viz., Johnson's—this is "a loosening of the soil so as to render it more fit for the reception of seeds or plants," and the Imperial Lexicon defines it as "opening or turning the earth with a spade." Some soils can be worked very well with a spade, particularly when the intention is not to stir them deeper than the ameliorated surface. But everything depends on circumstances. If the soil will admit of a couple or more spade-depths being readily turned then I make no objection, but there are few soils except alluvial that will admit of such easy manipulation, most requiring if they are to produce full crops in continuity to have something more than a mere turning or loosening of the ameliorated surface soil. Turning the surface 4 to 6 inches deep with the plough, and 10 to 12 inches with the spade, gives rise to the difference in the resultant crops. Subsoil ploughing and trenching are still further characterised by values of produce in a ratio to the depth of soil available as a source of aliment. Soils differ very much in depth. All have a certain amount of ameliorated soil resulting of the disintegrating action of the atmosphere, rain, and the product of prior or existent vegetable and animal life, the combination effecting changes of a character essential to a continuous course of vegetation through the constant assimilation of nutriment in the soil. It is not enough to get a good result by ploughing when a better can be obtained by subsoiling, and if we can increase the products of the soil by trenching there is absolute necessity for its displacing digging. I am no great advocate, however, of subsoiling or of trenching, particularly under all circumstances, but the best results, so far as I have had opportunity of observing, have been on soils that admit of their performance. They, however, are not available for all soils or for all cultivators. Some soils have only a few inches depth of good soil over a subsoil of sand, gravel, or clay, or an admixture that is not of a nature favourable to a good tilth or to cultural operations. To put good ameliorated soil beneath 10 or more inches of sand, gravel, clay, or an admixture of stubborn material is subsoiling or trenching to the present injury of the crops, and is neither advisable nor justifiable in any sense as a cultural practice. Much in such a case may be effected through pulverisation, aëration, manuring, and working the soil, but some time must elapse ere it can be brought into a condition favourable to the germination of seeds or the speedy establishment of plants, and the increased labour entailed may render the whole transaction unremunerative.

In trenching, therefore, the nature of the soil must be considered. When the soil is good enough to allow of the bottom spit being brought to take the place of the top, and the bottom underneath broken up if necessary by a pick and left, we deepen and improve for all time the land for garden crops. Practised in autumn, the surface thrown up roughly for exposure, and manure being added, it becomes thoroughly incorporated with the soil, or sufficiently so by the forking over, which should follow trenching during the first dry weather that prevails in spring for cultural requirements. It is not always advisable to bring up the bottom soil at first, as that when of a stubborn nature is positively injurious to crops; consequently the soil ought not to be trenched deeper than the good soil extends, that is the better for being turned top to bottom. The bottom soil may be loosened with a fork, or, if necessary, with a pick, with manifest advantage, especially if it have some light manure, leaf soil, or the most reduced part of the rubbish heap, the woody portion being charred and mixed with it. The change effected in course of time will improve the whole soil by making it deeper. Its value will appear in the current crops, inasmuch as the rain will pass more freely through, and it will take in air and nutriment which follow the passage of water, enhancing the assimilation of food in the soil by the increase of air, warmth, and decomposition of matter.

There are other considerations that favour trenching. Cultivation has something more to effect than maintaining the soil in fertility. The soil may be everything as regards tilth, yet the crops are not commensurate with its condition and the cultivation. The soil becomes rich in certain elements—decomposing matter, the result of preceding crops, and manurial applications, and filled with fungoid, insect, and other pests. Those detriments to successful practice are not to be trifled with, destructive agents must be used, or we must bury them well down in autumn to prevent their seeing daylight again. Inorganic substances, such as lime, have a tendency to descend, and the surface becomes a mass of organic matter, an intermixture becoming necessary for the formation of bases and plant food. Lime and potash may be present, but what good are they if beyond the reach of the roots?

Digging is only a primitive form of trenching; in fact trenching is often termed double-digging. Ploughing can only be characterised as an apology for digging, as demonstrated by observing the difference in the crops obtained by the two processes. By digging we stir the soil double the depth of the plough; the soil is more broken and intermingled; it is left more accessible to the atmosphere. But there is an advantage which dug land does not get in the dragging and the harrowing essential to the formation of a good tilth. These operations tend to loosen the soil in the spring, letting out water, and the warmth of the atmosphere is absorbed, which promote early growth, whilst the pulverisation forms a surface through which rain will pass freely, and also prevent subsequent evaporation. Autumn digging is all-important for pulverisation and the mixing in of manures. In such cases the surface should be left rough, for if left smooth and even it will, by the action of frost, have a surface of fine soil, and will not be nearly so warm, because there is more water in it than that which has been left through the winter in a rough state and turned over in early spring with a fork. This I have proof of in some land, part of which was dug in autumn level, and part by press of work had to stand over until early spring and was then dug even. Both were planted with Snowflake Potatoes in April, and now (June 2nd) those on the early winter dug part are 3 inches high, whilst those on spring dug are 6 inches high. The evaporation was greatest from the spring dug part because it was more open, and it consequently parted with water and took in air proportionately, and was more quickly warmed by the sun. This would infer that I advocate spring digging in preference to autumn or early winter; but, on the contrary, I advise, for all but very light soil, autumn digging, not breaking the soil with the spade, but throwing it up roughly. By that means there is a quantity of aërated and pulverised soil, and by turning it under we bring other less pulverised soil to the surface, which, if done early in spring, is sufficiently pulverised by the spring frosts to double the depth of the fine soil, forming a good tilth, and this is not only a good rooting medium, but admits of the free passage of rain, and is the best of all means of retaining the moisture for the benefit of the crops through the growing season, not being liable to crack, and admitting of expeditious cleanly culture.

That is no doubt the best way to treat heavy soils, but light soils I do not consider are improved by autumn digging or manuring. Such are fine enough and poor enough to begin with. They are best left alone during the winter, or if necessity prompt then by all means break the soil, but do not throw it up roughly, and if manure is used let it be fresh or rough. The strength of the manure will be incorporated with the soil by spring, and the land will be sufficiently loose for ordinary crops without further need of stirring it with the spade. Medium soils are best thoroughly dug in autumn, adding the needful manure, but light soils I would never trouble about digging until a short time before it is necessary to do so for putting in the crops or for cleanly culture, for to turn weeds under not being of a perennial character is a source of fertility and far too little practised.

Double digging is only another term for trenching, unless it be that the soil is only turned a spit deep, the top soil being left where it was but turned on the bottom spit, which is also turned and allowed to remain. It is a capital plan where the subsoil is poor. A better plan is to mix altogether as in turning a manure heap, keeping enough good soil on the top to secure ready tillage, and the best of all is to trench soils that admit of it every third or fourth year, and those that are not available for trenching should be stirred as deeply as possible.—G. Abbey.

(To be continued.)

MY AURICULAS IN 1887.

As I have never been much of an exhibitor, and have long since given it up altogether, I have the pleasure of growing my small collection for my own gratification, and that of those friends who may kindly visit my garden. I am sorry to say that those who do so and can appreciate the refined beauty of the Auricula are

very few, and this is one great disadvantage of living so far away from the "busy haunts of men." Were I residing on the outskirts of London, for example, I could have many an opportunity of seeing other people's collections, and of having them to visit my own garden, but this is denied me, and I must take it as one of the "cons" against the many "pros" of a country life. However, one has the advantage of not being in the feverish state which seems inseparable from the very calmest exhibitor. I am in no worry as to whether this or that plant may be in bloom by the show day, or whether this other will be over, or whether I should put this one under a cap glass, as used to be sometimes done to open it better. Still there are undeniable pleasures in exhibiting, and were it nothing else, it brings one into close contact with those of a kindred spirit I have, unfortunately, neither the patience nor the neat-handedness necessary for the hybridiser, and consequently I miss the pleasure of seedling raising. Besides, when one has reached the allotted span, seedling raising is, I fear, a vain dream, reminding me of a sturdy baronet in my neighbourhood who met with an accident in breaking in a horse for his own use when he was verging upon eighty. However, Auriculas have for fifty years given me many an hour of pleasant enjoyment, and I am quite as fond of them as I have ever been. My own collection is not a large one, but it contains, owing to the kindness of friends, most of the good sorts which I should not otherwise have had, for I do not care to pay highly; and while there are some of the old ones that I may perhaps discard if my stock of the better sorts increases, I cannot but feel how problematical it is that this will ever be in the few years which at best I can hope to see.

A dead set seems to have been made on the "friends of our youth," but I should be wanting in gratitude if I did not lift up my voice for some of them, and of those, too, whose acquaintance I made in middle age. I hope that I am not prejudiced, and I fully recognise the very great beauty of many (although not by any means all) of the flowers which have been raised of late years, and which have received honours. There may be, perhaps, some of the "sour grape" feeling, but withal that I, being obliged to grow many of the older varieties, still find beauty in them. There is no reason why the rate of progress should not hold good with the Auricula as with other flowers. It presents, it is true, greater difficulties, but that only requires greater patience. We have seen (at least I have) the beautifully round and brilliant coloured flowers of the Pelargonium, and can recollect such flowers as Garth's Joan of Arc, which created a furore in its day, a flower we should now stigmatise as starry and ill-shaped. We have seen the small Tuberous Begonia so improved as to become almost too large for our requirements, and so on; but then there is this difference, we may soon expect, when we hear of anything remarkable in such plants, to get them for ourselves. Now those who raise seedling Auriculas are few in number, and I do not see why they, setting before themselves a high standard, should not be able to reach the same height of success as some have already attained; but we look on and admire, but do not expect to add them to our collections. Auriculas cannot be propagated as other plants. There may be some which by nature are prolific in giving offsets, such as Acme, Conservative, Traill's Beauty, and many of the selfs; there are others which will hardly give one in a year, and I fancy few care to cut the head off a fine plant in the hope of its yielding offsets, and hence the high price which many still maintain, even although they may have been in commerce for twenty years or more.

I have ceased to have any anxiety about the woolly aphis which some years ago so bothered me, not that I am free from it, for on turning out my plants I found it still with me, but I am doubtful as to its injurious effects if ordinary care is given to the plants. If they are not potted too low, and the collar well kept above the soil so that it can be watched, the effects of the aphis on the roots is not injurious. Doubtless if they were not disturbed, but allowed to work their own sweet will, it would be otherwise. Not only does the Auricula afford them a home, but I have found them on the plants of many species of Primula which I obtained from a well-known nursery in the North, and I have found them on Lettuce roots, and even on weeds in my garden, so that I do not see much prospect of getting rid of it, and as the general character of my collection last year was healthy, I must submit to what, I fear, is the inevitable.

I lost a few of my larger plants by rot or canker, which seems to attack them for no reason whatever that I can see, and I have often wondered whether it may not be a constitutional defect belonging to the Primulas, or at least to some of them—*i.e.*, whether they are not really more shortlived than we imagine. There are many species which are used in the rock garden which, although described as perennial, are little better than biennials, and of which it is necessary to keep up the stock by continual sowing of the seed. On wild Primroses it is very difficult to speak, they are continually seeding, and seedling plants spring up around the habitat of the parent, but whether it dies or not I do not know, but P. rosea, for example, becomes, with me at any rate, very inferior after a couple or years or so, and apparently requires to be treated almost as a biennial, although it does not absolutely die after the second year of flowering. I had some fine but oldish plants of Richard Headly, which for some reason or other last year dwindled away. They did not die, but neither did they live; at least did not show much signs of life, and did not flower this spring, and as they were treated in the same manner as the others, I can only conclude that it is something of this kind of constitutional old age which has weakened them; at least I can discover no other cause than this. I will next refer to varieties.—D., *Deal.*

(To be continued.)

VEGETABLES FOR EXHIBITION.

CUCUMBERS.

For exhibition purposes Cucumbers must be quickly grown, straight, even sized, short necked, dark green in colour, and carrying a good bloom. Very rarely can old plants be made to produce fruit meeting nearly or quite all these requirements, and in most instances it is advisable to raise a few plants especially for the production of exhibition fruit. The majority of provincial or local shows are held late in July and early in August, and long before that time the plants started in the winter or spring months are in an exhausted state, and most probably infested with red spider. Instead, therefore, of relying upon these to yield presentable fruit, it will be found far better to sow seed about nine weeks before the date of the show, singly in 3½-inch pots, and set in gentle heat to germinate. They should be raised and kept growing well clear of any other plants likely to be infested with any kind of insect pest, and if the site is not ready for them by the time the pots are becoming filled with roots give them a shift into 6-inch or larger pots, using a fairly rich loamy soil. These precautions are necessary, as to start with either dirty or badly rootbound plants is to court failure from the first.

Whether the plants are eventually grown in houses, frames, or pits, must depend upon circumstances. They are certainly more under control, and produce the cleanest and straightest fruit in a house, but capital produce can also be had from plants in pits and frames. They succeed admirably on the north or shadiest side of a span-roofed house, or on the back portion of a three-quarter span-roofed house, Melons being grown if need be on the front or sunniest side of the structure. If a slight hotbed is formed this will give the plants a strong start, and the roots will soon take possession of the heating material. With good attendance they will thrive for a time quite as well in mounds of soil only, placed on a slate or trellised bench. A heavy clayey loam is altogether unsuitable for them, this better suiting Melons; but if it must be used let it be as rough and turfy as possible, and add plenty of burnt soil, charcoal, and leaf soil. If light turfy loam is available little else need be used, and in any case no partially decayed manure should be added, this soon clogging the soil, and also is a frequent means of introducing the tiny worms which cripple the roots so badly as to cause a complete failure. The plants may be placed out about 4 feet apart, and mounds equal to about two bushels of compost is ample for each at the outset. Plant as soon as this is warmed through. Rub out side shoots until the trellis is reached, when the plants may be stopped and encouraged to form two or three strong shoots, which, in their turn, may be stopped at the third or fourth joint, the breaks following upon this stopping being sufficient to lay the foundation of a profitable plant. Do not let the plants bear heavily, if at all, long before the date of the first show, and about ten days before they are wanted select four or five of the best formed young fruits, and after these have flowered and made sufficient progress to guide the cultivator in his selection, reduce the number to two or three fruits on each plant. Stop the branches at the second joint beyond the fruit before the use of a knife is necessitated, and also thin out superfluous growths so as to avoid unduly crowding the foliage. This treatment being persevered in, the plants will continue to produce handsome fruits suitable for any purpose. The roots ought not to be confined to the small heaps of soil, and should receive occasional light surfacings of turfy loam or as fast as the old compost is filled with them.

If only a few fruits are wanted, and that quickly, they may be either planted in tubs, large pots, or in mounds of soil about 3 feet apart, and taken up the roof without stopping, or much as Melons are trained. The laterals will be thrown out at each joint, and in most instances will form a cluster of fruit at the first and second joints. Stop at the leaf beyond these, and also freely thin out the young fruits, not leaving more than two or three of one age to

mature. The leader need not be stopped till the limit of roof trellis is reached, and a good succession of handsome fruit ought to be produced throughout the whole length. As a rule plants thus trained and closely cropped are scarcely worth keeping after the uppermost fruits have been cut, but if they are in good health the sub-laterals should be frequently thinned and stopped at the second joint, and many more fruit obtained. Cucumbers have been cut in about six weeks from the time of sowing the seed, but in this case they were grown at an express rate, and not less than eight weeks had better be allowed.

Old house-grown plants, or those that have done good service for several weeks or months past, can sometimes be brought into a vigorous condition again and capable of producing fairly good fruit. It is useless to make the attempt with plants badly overrun by red spider, mealy bug, or other pests, as none of these can be got rid of short of destroying the foliage. The first proceeding should be to freely thin out the haulm, removing as much of the old growth as possible, and also the greater portion of any fruit that may be hanging. Next loosen the surface soil, removing any that is sour, or which is not occupied by roots. Give a good watering if need be, and top-dress with roughly chopped turves, or a compost such as I have previously described. Then if a brisk "growing" temperature is constantly maintained, the plants being frequently syringed and plenty of moisture distributed about the house, fresh growth will soon be formed. This should be allowed to ramble to a good length before the points are taken out, and the subsequent breaks will produce fruit in abundance. A heavy crop ought never to be left on plants that are to produce exhibition fruit; in fact it is very necessary that Cucumbers for all purposes, if they are to be continuous cropping, must be prevented from bearing as they please, or otherwise gluts will result at one time and scarcity at another.—EXHIBITOR.

(To be continued.)

GARDEN FARMING.

IT is somewhat late, but better late than never, to direct attention to an exhaustive article under the above heading in the *Quarterly Review** for April. The volume did not reach us till a considerable time after its publication, and then the pressure on our space was great. The subject, however, is not of an evanescent nature, but of permanent interest, and never out of date. The writer of the article appears to have a good grasp of his subject, and seems to have spared no effort in acquiring information, statistical and otherwise, to render his deductions reliable and his work of substantial value. The extent of nurseries, market gardens, and orchards are tabulated, and their areas compared with former years. We next find statistics given on Potato culture, with the extent and value of importations from the Continent and Channel Islands, these being mainly of early produce. As regards late Potatoes for winter use, which those who do not know how to grow them say they cannot be grown profitably, we find an enormous increase in their culture in the chief English Potato-growing counties, but a comparatively slight decrease in the less favourable climate of Scotland. Full crops of late Potatoes are still remunerative, if we may judge by the evidence of the best growers, and a considerable export trade was opened last year with America, the extreme severity of the winter there preventing the produce of the Northern States reaching the great centres of consumption.

The sources of supply of different kinds of vegetables and fruits, with indications of the bulk and value of the produce, are brought under review—Asparagus, Broccoli, Beans, Seakale, Onions, Mushrooms, amongst the former; and in respect to oversupply and loss in culture that occasionally occurs, the author points out two evils—faulty distribution and high railway charges—on this twin question observing:—

"Mr. Whitehead and others contend, not only that the home supply would not be too large, if we had a better system of distribution, but that it might well be increased to a great extent. The fact that rail charges and the salesman's commission often balance, and sometimes exceed, the amount realised by vegetables sent to market, is alone a strong indictment against the existing system. It is to be observed, moreover, that in seasons of the greatest plenty, when the markets are supposed to be glutted, and growers get extremely small prices, millions of the population are short of vegetables on their dinner-tables. The poor can buy vegetables more cheaply in the markets of the East of London and in such great centres as Manchester and Birmingham, to which large supplies are constantly consigned, than in the small towns or even in the villages of the rural districts. People who require the greengrocer to call for orders, and afterwards to send to their houses vegetables worth a few pence, must expect to pay more than double, or perhaps four times what the grower receives; but there should be markets in all towns where the poor can obtain their supplies at much less than the greengrocers' ordinary charges. Mr. Hunt says, that rail rates for green stuff from Evesham to many places, including London, are prohibitive, and are very high for everything; also that small growers are placed at a special disadvantage by the large extra charges on small quantities of produce. It is a common complaint, too, that the rail charges on vegetables for short distances in this country are much higher comparatively, and in some cases absolutely higher, than the rates for the same kinds of produce imported from France or Holland. Another grievance is that, whereas the foreign produce is conveyed by fast boats and express trains, the home supply of vegetables is mostly carried by goods trains, and 'shaken and smashed up,' as Mr. Whitehead expresses it, 'by the bumping and banging occasioned by "picking up" at the various stations.'"

In respect to fruits, we find an admirable digest of the supply of Apples, Pears, Tomatoes, Grapes, Strawberries, and various bush fruits, with the quantities grown and the value of the crops so far as can be ascertained. The writer, like many another, seems to have been in a little doubt as to whether to place Rhubarb amongst fruit or vegetables; and though he correctly says in a strict classification it would be placed among vegetables, but as it is used as a fruit, he lets it remain on the American compromise as the "Pie plant." He appears to be cognisant of the culture and forcing operations of Rhubarb in the Leeds district, which are more extensive than is generally known, though of course enormous quantities are forced in the market gardens round London.

The works consulted and duly acknowledged in the preparation of the article are Hogg's "Fruit Manual," Barron's "Apple Congress Report," and "Vine Culture," Whitehead's "Market Gardening and Fruit Farming," Wright's "Mushrooms for the Million," Rivers' "Miniature Fruit Garden," Bunyard's "Fruit Farming for Profit," the *Field* newspaper, and the "Agricultural Returns." Thus its comprehensiveness will be understood; but there is an important description of the garden farming in the Channel Islands which appears to be founded on personal inspection of the work, for the author observes:—"Without a visit to the scene of their untiring labour it is impossible to gain a fair conception of the excellent use which the Channel Islanders make of their land and their opportunities. Depression has been felt by them, it is true, but only to the extent of a diminution of great prosperity, which is almost entirely owing to the fall in the value of cattle and the failure of two banks, and has little, if anything, to do with garden farming. It is also true that the enormous prices which the pioneers in the supply of early produce obtained some years ago remain only as memories; but where one man obtained handsome returns from Covent Garden twenty years ago, there are now ten or more receiving thence much larger sums, and fair, though not such extravagant profits."

The extent of early Potato growing in Jersey, with the cost and profits of culture, are interestingly described, and it is stated that the export of 50,670 tons last year showed an average return of upwards of £67 per acre, the total cost incurred in production being estimated at about £45; but the land, we are told, "is becoming more and more occupied by Frenchmen." We are now tempted to cite a few paragraphs—a mere fragment of the article—of which they display its general character.

"The most extensive owner of glass houses in Jersey is Mr. George Bashford of St. Saviour's, who has now about 12 acres occupied with glass houses and the necessary roadways, and expects to have his whole garden of 13 acres utilised before the end of next year. The remarkable success of this enterprising garden-farmer, who entered into the business, which has grown so rapidly under his management, without any previous training as a gardener, is one of the wonders of the Channel Islands. Better management is probably nowhere to be found than Mr. Bashford's, and a brief description of his crops will serve as an illustration of those grown under glass in both islands. He has a great quantity of Potatoes in his houses, with Tomatoes planted between the rows, some being artificially heated, and others not. Mr. Bashford does not force his Potatoes, however, but plants those in hothouses a month later than those in cool houses, so that all come to be raised at about the same time; his opinion being that forcing Potatoes is not sufficiently remunerative. Last year the average price he obtained for his tubers was 7¼d. per pound, and he commonly produces as much as 11 tons to the acre, and has grown at the rate of nearly 20 tons. In 1873 he sold Potatoes at 2s. 3d. per pound, but does not expect to realise such a price again. The price last year was 7d. to 9d.

"French Beans are grown in hothouses between rows of Tomatoes, to be picked in January and February, when they sell at 2s. to 2s. 3d. per pound. Some years ago the price was no less than 6s. per pound. Peas are produced in cool houses only, picking being begun early in April, when the price is 1s. 6d. per pound. Cucumbers also are grown, to be succeeded by Tomatoes for winter use.

"Mr. Bashford has sent 80 tons of Tomatoes to London in a year, and now that he has increased his area of land under glass he expects to grow 120 tons per annum in a favourable season. His average price last year was 6¾d. per pound. Tomatoes, with or without French Beans or

* John Murray, Albemarle Street.

Potatoes, are produced in the same houses as Grapes, until the Vines cover the glass, after which the shading would be too much for Tomatoes, though early Potatoes can be raised and matured before the leaves of late Grapes cover the glass. In the middle of March, even in this late season, Mr. Bashford had begun to pick fruit from his earliest Tomatoes, some of which were 5 feet high. The bulk of those in heat are ready by the end of March, and those in cool houses come for picking by the end of June and in the following months to the end of autumn.

"Last year Mr. Bashford sent 25 tons of Grapes to London. He has two houses with double walls lined, as are the roofs and floors also, with sawdust, to keep out frost, in which he can store 12,000 bunches of Grapes, the stems being inserted in bottles of water. The fruit is thus stored in the middle of December, and kept for a month or two until the price is high.

"If Jersey is the Island of Potatoes, Guernsey may fairly be termed the Island of Glass. In or near St. Peter's Port there are several extensive establishments similar to that just described, though none at present as large, in which Grapes, Melons, Tomatoes, and early vegetables are produced. But what is more remarkable is the great number of glass houses on the small farms, and even in the cottagers' gardens. Nearly all of these are cool houses, in which late Grapes, Tomatoes, Peas, and Potatoes are produced, forcing being, as a rule, only practised by the extensive growers, and in gentlemen's hothouses. Flowers and salad, too, are cultivated for export by market gardeners, and Broccoli by the farmers.

"Guernsey is not so well fitted as Jersey for the growth of early vegetables out of doors, chiefly because the slope of the former island faces the north instead of the south, and frost is more common. It is not surprising, then, to see that the cultivation of Potatoes in Guernsey has declined, or that rents are much lower there than in Jersey. The total area of land occupied in 1887 in Guernsey and the smaller islands is returned at 11,773 acres, only 877 acres of which are under Potatoes, as compared with 1044 acres in 1877. Rents range from as low as £3 to nearly £10 an acre, but the most common sum appears to be £6 or £7, or about £3 less than in Jersey.

"An excellent instance of enterprise on the part of a Guernsey farmer is to be seen in the case of Mr. Le Pelly, who farms about 35 acres of land. He grows Potatoes, Broccoli, and other vegetables for export, and this year he has sold the crop of Broccoli as it stands at £36 an acre. Last year he erected an excellent glass house, 100 feet by 36 feet, at a cost of £230, and grew in it over 2½ tons of Tomatoes, sold at £74, which was a pretty good return for the first year on his investment. As an instance of a greater money return than that obtained for Broccoli by Mr. Le Pelly, we may state that the price for Tomatoes in the middle of March was 1½d. each in London, or 1d. clear of expenses of carriage and sale. As nearly 10,000 Broccoli are grown on an acre, the net value of the crop is over £40 an acre, which was realised on one farm visited last March; and these vegetables are off the land in time for another crop of some kind to be grown this year."

This exhaustive and valuable contribution to the "Quarterly" concludes as follows:—"Although we are far from underrating the natural advantages enjoyed by garden-farmers in the Channel Islands, we cannot fail to see that there is a great deal in their practice which might be extensively imitated in the United Kingdom. Early Potatoes, with other green crops to follow in the same season, might be grown in the south of Ireland, and in some parts of the south of England, to a greater extent than at present, and almost if not quite as advantageously as in Jersey; while a few enterprising Englishmen have already proved that the extensive use of glass in the growth of certain kinds of produce can be as successfully practised here as in Guernsey. No doubt it would be easy to overdo this description of enterprise, but it will be time enough to think of that when something more than a beginning has been made."

EXCESSIVE MANURING.

CULTIVATORS as a rule are anxious to give their plants and crops as much manure as possible, but in many cases this is quite overdone. I have had crops of Peas, Beans, Cauliflowers, and Onions pointed out to me that were said to be "growing in almost all manure," and yet they did not succeed as well as those in poorer soil. This could not be understood, but I think it is easily explained. In the hope of having extra good produce a piece of ground is opened for Peas. A thick layer of manure is placed at the bottom, a little soil on this, and the seed is sown. So long as the manure and soil are moist all may go well, but when the hot dry weather comes, such as was experienced last summer, the manure becomes dust dry. What roots were in it perish, no more penetrate it, and the plants have only the top and surrounding soil to live on. Further, this mass of dry manure acts as drainage, and the plants suffer more and more. I have seen Peas planted under these conditions hardly produce one gathering of pods in July and August. Onions, again, are very apt to fail from the same cause. A mass of manure is placed under them, the roots penetrate it, but when the dry weather comes they cease to form good bulbs, and terminate in only having "thick necks."

I am altogether opposed to those masses of manure where drought has to be contended against, and I neither use them nor recommend them. Where the manure is well worked through the soil it is quite different, as the roots have a substantial mass to take hold of, drought is slow in having any influence, and the plants are both substantial and fruitful. I am of opinion that soft pithy Celery is mainly produced by the plants growing in too much manure; and by using it in moderation, and, above all, mixing it well with the soil, the sticks are invariably firm throughout. This rule also applies to plants in pots. Where too much manure is used the plants only make long soft growth. They are almost constantly in want of water, and they are very apt to become too dry.—J. MUIR, *Margam.*

LEPTOSPERMUM BULLATUM.

AT several of the recent exhibitions Messrs. J. Laing & Sons, Forest Hill, Messrs. Cutbush & Son, Highgate, and other firms, have shown examples of this graceful greenhouse plant, and at the Temple Exhibition

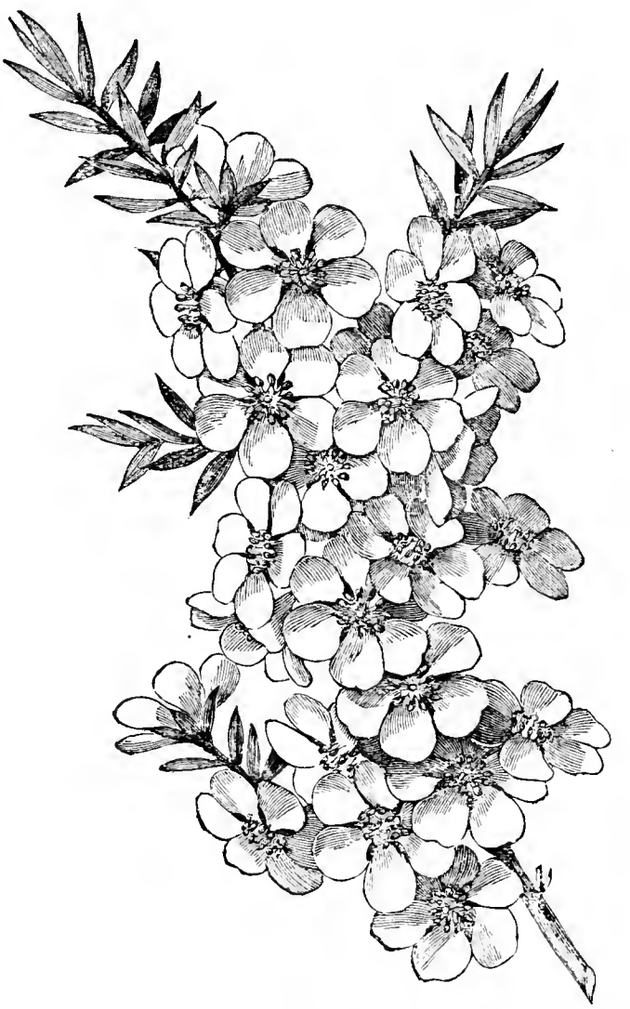


FIG. 64.—LEPTOSPERMUM BULLATUM.

of the Royal Horticultural Society some specimens from Forest Hill were particularly noteworthy. It forms a compact shrubby plant, with narrow leaves and abundant white flowers, slightly tinged with red in the centre. Similar treatment to that accorded ordinary hardwooded plants suits it, and though the individual flowers do not last very long, there is a good succession.

ARTIFICIAL MANURES.

I SEE that my worthy opponent has been infusing new life into this pleasant and, I trust, useful controversy, by striking out right and left with renewed vigour, showing how my bold assertions require propping up, and then claiming the theory of those assertions as his own. He next turns his attention to a case mentioned by "B.," and after criticising him in one paragraph and applauding him in another, finishes by a desperate attack upon what he terms my "experimental trials," and my want of "experience" in conducting them. There are always two sides to every question, and the only way that I can account for the conclusions Mr. Coombe has arrived at is that he has been using those great advocative powers, which I have already pointed out he possesses, by placing those points that tell in his favour prominently forward, and in

his diligent search for them quite overlooking a few others, which I think should be kept in view.

Why he should consider I have finally settled the point regarding the use of nitrate of soda in his favour I cannot understand, as I have throughout this debate continually and consistently recommended changes of food to be given to plants, such as liquid manures from stables and cowhouses, to be varied at intervals with guano, nitrate of soda, and such stimulating substances, and I have already pointed out that the manure and urine of animals are rich in the solidifying agents, and in the case of pot plants the soil used is invariably rich in potash and phosphoric acid, and unless these elements are present in sufficient quantity the nitrate of soda will not have its full effect, as a vigorous growth cannot be built up without solidifying agents are present, but when they are present and too large a quantity of soda is given, it causes vegetation to draw out from the soil large supplies of these elements, and consequently to produce a greater amount of vigour than can be properly solidified by the influences of light and air. This is why I contend the best results are produced by using the nitrate in the way I have advocated. That is given whenever the result of daily observation shows that more vigour is desirable, taking into consideration the varying conditions of weather in each particular season. On his foundation my answer to his query, "Does the constitution of a plant improve because its bulk increases?" will rest securely. It is not altogether a question of keeping a plant merely in health, but also of enabling it to produce the greatest amount of vigour that can be attended with the best results. And I maintain that this is the better accomplished by applying stimulating substances at intervals instead of forming them into a "properly proportioned combination," so as to bring out the full productive powers in the soil at a time when the strain on the plant's energies is the greatest. This is no "fad," but a fact.

After having duly refreshed my memory by referring to what Mr. Coombe has already written on this subject, I fail to find a single instance in which he has taken into consideration the various stages of growth that plants pass through and the condition they are in at the time he would apply manures, but I do find that he has shifted his ground considerably. In one of his earlier contributions he pins his faith upon fanciful mixtures, which he dubbed by the euphonic title of "properly proportioned combinations of the elements needed," but I am glad to notice he is gradually abandoning that idea as unnecessary, if not impracticable. Unnecessary, because experience teaches us that for practical purposes no better results are obtained by the use of the minutely proportioned mixtures so long as the prineipal constituents of plant food are present, and impracticable because the method of compounding manures in the same way that a druggist does medicine, which the enthusiasm of my opponent led him to believe would become a special feature in gardens of the future, would be worse than useless unless gardeners had also sufficient scientific knowledge to analyse the soils they had to deal with, otherwise they would compound manures proportioned according to the constituent parts of plants to be supplied with it, while the soil in which they were growing would contain an excess of those elements and a deficiency of others, which would throw those calculations out of balance. But to do my opponent justice, I do not think he really believed seriously in such mysterious compounds. That idea was simply intended as an artistic embellishment for his article. But it is by results that these "fads" must be judged, and not by words.

I feel somewhat flattered by the generous tribute my opponent has paid to my rapid advance in the attainment of scientific knowledge, but I felt it behoved me to arrange a few scientific facts within my reach in such a way as to show that my practice is compatible with theory in its surest form—viz., when it has been proved to be correct; and I venture to suggest that possibly Mr. Coombe has been busy in that direction himself of late. I cannot admit that the system of giving plants such changes of food as are known to produce highly satisfactory results is a haphazard one, but I should call it both rash and haphazard to depend on a certain chemical combination manufactured according to the elements of which plant life is built up, without any regard to the quantities of each already in the soil, and by going in for these nicely proportioned combinations much needless expense is often incurred unless the soil is analysed to find out the exact quantities of each it contains; and even then, when we consider that sometimes a given crop takes up a much larger proportion than at others, which science as yet cannot explain, we are compelled to look for some other way of working, and on these lines I have striven to maintain this controversy, in the first place by advocating changes of food which are known from experience to be good, and in my latest article showing how that system agreed in the main points with scientific theories.

I have repeatedly observed ample proofs of the advantages to be derived from giving certain portions of plant food at various stages of their development, and we have recently had a notable illustration of the wisdom of that practice by applying lime to Peach and Nectarine trees during the stoning period, the result being even beyond our expectation—much better than when given at the winter dressing; and the conclusion I draw from this is that there must be a greater demand for that substance while the stoning process is going on than at any other stage of development, and consequently a supply is needed at that critical time.

The portion of Mr. Coombe's article in which he criticises the case mentioned by "B.," I need not enter into, as it will doubtless be dealt with by that writer with his usual force and clearness; but as my opponent has devoted the two concluding paragraphs of his article to a vigorous attack upon what he chooses to call my "fads," and "the experience I hold so dear," I feel somewhat disposed to correct a few of his random statements. Referring to the question, Does nitrate of soda leave the soil in an exhausted condition? he says, "Can he (meaning myself) not see that the quotation he gives directly supports what I advised at the commencement, that it should not be used alone, but combined with other substantial plant foods?" I reply, Certainly I cannot, nor do I see by what process of reasoning he can do so, as the quotation I gave plainly shows how illogical it is to raise any objection to the use of nitrate of soda, because it transforms into produce the raw material at its disposal in soils and in manures, and thereby increases the yield. He also again repeats, but if the phosphoric acid and potash should unfortunately not be present in consequence of repeated applications of nitrate. Now he would not have asked that question in this case if he had not altogether overlooked one fact, that the quotation I gave pointed out the importance of returning to the soil the amount of phosphoric acid and potash the crop had taken from it before another crop was sown or planted, and then stimulating manures should again be used at intervals to produce the greatest amount of vigour found to be desirable. I stated in my last article that the nitrate and ammoniacal manures should not be combined with the other materials because they are not fastened up by the soil, but remain freely moveable, and a residue not quickly taken up by the plant would be dispersed, and consequently wasted. In answer to Mr. Coombe's charges of inconsisteney, let me ask him to refresh his memory with a glance at his second article on this subject, he will there have the satisfaction of seeing he himself admits the inconsistency; and as to the anomalous position he asserts I have placed myself in, I am inclined to regard that statement as an exaggeration.—H. DUNKIN.



ROSE SHOWS IN 1888.

June 26th.—Boston.
" 28th.—Broekham and Ryde.
" 30th.—Eltham, Colchester, and Reigate.
July 3rd.—Bagshot, Canterbury, Diss, and Hereford.
" 4th.—Croydon, Dursley, Farnham, Hitchin, and Richmond (Surrey).
" 5th.—Bath, Farningham, and Norwich.
" 6th.—Sutton.
" 7th.—Crystal Palace (National Rose Society).
" 10th.—Gloucester, Ipswich and Oxford.
" 11th.—Ealing and Tunbridge Wells.
" 12th.—Birmingham, Carlton-in-Lindrick, and Winchester.
" 14th.—New Brighton.
" 16th.—Newcastle-under-Lyne.
" 17th.—Leek and Ulverstone.
" 18th.—Birkenhead.
" 19th.—Helensburgh.
" 20th.—Darlington (National Rose Society).
" 21st.—Manchester.
" 24th.—Tibshelf.

In the above list the only exhibitions not held by the National Rose Society, or by Societies in affiliation with it, are those at Birmingham, Boston, Carlton-in-Lindrick, Dursley, Manchester, Newcastle-under-Lyne, and Richmond. In the case of Birmingham and Boston, where the shows extend over two days, the date of the first day's exhibition only is given.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

SEASONABLE WORK.

STANDARDS present but a poor appearance, so many of them being either killed or badly injured by frosts during the past winter. The dwarfs, notably those on their own roots, are, fortunately, in excellent condition, and, in fact, are improved by the rather severe shortening of the old wood, much of it having been killed to within 6 inches of the ground. All ought to have the young growths thinned where crowded, the useless spray especially. The early removal of a great number of side buds is also most beneficial, those reserved being much improved thereby both as regards size of blooms and the substance of the petals. In most instances the central buds are preferred; but if these are damaged in any way, or are deformed, they ought at once to be pinched off, and a prominent side bud reserved. It is also advisable to remove a few central buds on each bush, and this will insure a better succession of bloom, the side buds usually being the latest. A good look out for maggots ought to be kept. The ground about the Roses, being in a half-moist condition, is just right for receiving a liberal supply of liquid manure, such as the drainings from a farmyard, or a light surfacing of artificial manure, may be washed in with advantage. If fine show blooms are required something of the kind must be given, and even if not wanted for exhibition well "built up" flowers last much the longest in a cut state. Before a watering is given the surface of the ground should be lightly forked, and subsequently a liberal mulching

of strong manure, short grass, cocoa-nut fibre, leaf soil, spent tan, or even dry soil, ought to be given. If the manure proves objectionable, cover it with a little soil.

THE EARLIEST ROSES.

Yellow Banksians are among the earliest to flower against sunny walls, and in some seasons the white variety proves an excellent companion. This year, for some unaccountable reason the latter has not done well. Medium-sized well-ripened shoots produce wreaths of bloom, and they ought, therefore, to be preserved as much as possible, and the more rank growth cut away early. Madame Bérard, a variety much resembling Gloire de Dijon, and really superior to that old favourite, is now flowering grandly, and is very useful for cutting from. Early formed and fairly strong growths of both varieties will usually develope a bloom at nearly every joint in the autumn. They ought to be only lightly secured to the walls for a few weeks, and if, when the wood is firm, these shoots are given a good curve this will insure a plentiful supply of blooms. Climbing Devoniensis is now flowering freely, and will continue to do so for several months. Young growths should be laid in or taken care of, this tending to keep the trees in good health. Safrano is one of the first to flower freely and in a bud state is very beautiful. A free use of the knife improves this variety as well as Madame Falcot. Catherine Mermet is very fine against a sunny wall, and care should be taken of the strong suckers pushed up from plants on their own roots, these branching and flowering strongly. Maréchal Niel was much injured during the past winter, and only a few blooms are formed or forming. Any long shoots on this variety should be tied or nailed to the walls, as it is these that will produce much the finest blooms next season. Old plants in pots, or any struck early and duly hardened, may be planted against a sunny wall, and will frequently, if given good loamy soil and well attended to, grow vigorously. It is quite a mistake to depend upon old plants of Maréchal Niel, the wisest course being to plant a few every year. The Bourbon Souvenir de la Malmaison flowers early and late against sheltered walls, and is also one of the first to flower in the open. It succeeds best on its own roots, the finest blooms being obtained from the strongly branching sucker growths. In the case of Teas and Hybrid Perpetuals generally it is a decided advantage to have early blooms, and these being cut as fast as they open causes an early second growth, and consequently a good succession of flowers.—W. I.

UTRICULARIA CAMPBELLI.

Mr. F. Boyle contributes to the June number of *Longman's Magazine* an interesting article upon "An Orchid Farm," in the course of which the following passage occurs relative to a new "scarlet Utricularia," which is imported in the axils of Vriesias.

"A little story hangs to the exquisite U. Campbelli. All importers are haunted by the spectral image of Cattleya labiata, which, in its true form, has been brought to Europe only once, forty years ago. Many thousands of pounds, many years of adventurous travel have been spent, in the aggregate, upon efforts to rediscover it; in vain. Some time since, Mr. Sander was looking through the drawings of Sir Robert Schomburghk, in the British Museum, among which is a most eccentric Cattleya named—for reasons beyond comprehension - a variety of C. Mossiæ. He jumped at the conclusion that this must be the long lost C. labiata. So strong indeed was his confidence that he despatched a man post haste over the Atlantic to explore the Roraima Mountain; and, further, gave him strict injunctions to collect nothing but this precious species. For eight months the traveller wandered up and down among the Indians, searching forest and glade, the wooded banks of streams, the rocks and clefts, but he found neither C. labiata nor that curious plant which Sir Robert Schomburghk described. Upon the other hand, he came across the lovely Utricularia Campbelli, and in defiance of instructions brought it down. But very few reached England alive. For six weeks they travelled on men's backs, from their mountain home to the River Essequibo; thence, six weeks in canoe to Georgetown, with twenty portages; and so aboard ship. The single chance of success lies in bringing them down, undisturbed, in the great clumps of moss which are their habitat, as is the Vriesia of other species.

"It may seem unaccountable that a plant of large growth, distinct flower, and characteristic appearance, should elude the eye of persons trained to such pursuits, and encouraged to spend money on the slightest prospect of success, during forty years. But if we recall the circumstances thoughtfully it ceases to astonish. I myself spent many months in the forests of Borneo, Central America, and the West African coast - several years, if they be reckoned together. After that experience I scarcely understand how such a quest, for a given object, can ever be successful unless by mere fortune. To look for a needle in a bottle of hay is a promising enterprise compared with the search for an Orchid clinging to some branch high up in that green world of leaves. As a matter of fact, collectors seldom discover what they are specially charged to seek, if the district be untravelled—the natives, therefore, untrained to grasp and assist their purpose. This remark does not apply to Orchids alone; not by any means. Few besides the scientific, probably, are aware that the common Eucharis amazonica has been found only once; that is to say, but one consignment has ever been received in Europe, from which all the plants in cultivation have descended. Where it exists in the native state is unknown, but assuredly this ignorance is nobody's fault. For a generation at least skilled explorers have been hunting. Mr. Sander has had his turn, and has enjoyed the satisfaction of discovering species closely allied, as Eucharis Masteri and Eucharis Sanderiana; but the old fashioned bulb is still to seek."

Notes & Gleanings

Events of the Week.—Upon Friday next Messrs. Protheroe and Morris will have their usual sale of Orchids in the Cheapside Rooms. On Wednesday, June 20th, the second summer Show of the Royal Botanic Society will be held in Regent's Park, the schedule including liberal provision for plants, flowers and fruits, so that an extensive and representative show may be expected.

—— The Weather.—"B. D." writes from Perthshire:—"Little sunshine, latterly much rain, and generally cold, unpleasant weather, have been the features of the past week. During the night between the 9th and 10th inst. a severe gale, resulting in considerable damage to fruit and other blossom, prevailed over Central Scotland." In and near London the weather has been agreeable during the past few days, and generally favourable for vegetation. On Saturday last welcome and copious showers fell in some districts in the south.

—— We have to announce with much regret the death of Mr. Thomas Jackson of Kingston, which took place at his residence in Fife Road on Thursday last. Mr. Jackson was only 37 years of age, and succeeded to the old-established nursery business of Messrs. Jackson and Son a few years ago, while he has been widely known for a considerable period as the Honorary Secretary of the successful Kingston and Surbiton Chrysanthemum Society. At the annual meeting last December he resigned this post on account of failing health, and Mr. Woodgate was elected his successor.

—— A Suffolk Vicar sends us a description of an early variety of Rhubarb which he grows in his garden and proposes distributing, as the hardiest and earliest of all—"so hardy," the Vicar says, "that cold suits it, and of no other kind has it ever before been found that the severer the winter the earlier the Rhubarb." It is also said to be the sweetest of Rhubarb. If the Vicar will oblige by sending us a sample we shall be glad to examine it and to refer to the variety again.

—— Proposed Testimonial to Mr. A. Roger.—It has been suggested that the retirement of Mr. Roger from the position of Superintendent of Battersea Park, which he held with so much credit to himself during the long period of seventeen years, is a very fitting opportunity for some slight recognition of his services to horticulture being acknowledged by his friends. Mr. Roger is now in failing health; any sympathetic movement on the part of his friends will be very much appreciated by him. Mr. Harry J. Veitch, Royal Exotic Nursery, King's Road, Chelsea, has consented to act as Honorary Treasurer to any fund that may be raised for the proposed object.

—— We are informed that Messrs. E. H. Krelage & Son of Haarlem have been appointed nurserymen and seedsmen to the King of the Netherlands.

—— Messrs. J. Carter & Co.'s houses and frames filled with Calceolarias and Petunias constitute an exceedingly attractive feature at the Perry Hill Nursery at the present time. Special strains have been obtained of both these useful plants, the Emperor Petunias and Victoria Prize Calceolarias being the titles adopted for the diversified and richly coloured seedlings, every care being taken in selection and crossing to not only maintain their character but to improve them.

—— Some fine bushes of the Double Gorse, or Furze, are conspicuous at the present time in the gardens of Hackbridge Grange, Carshalton. They are loaded with bloom, and the flowers individually are far more attractive than those of the common Furze. If the effectiveness of this plant, and the fact that it will grow in almost any soil, even that of a poor, dry, sandy nature, were generally known, it would probably be seen more frequently, both in large and small gardens, than is now the case. Propagation is effected by inserting cuttings of ripe

shoots in sandy soil on an east border as early in summer or autumn as they become firm.

—— "W. P. W." writes :—The far-famed Rhododendron beds at Duneevan, near Weybridge, the residenee of Mr. J. McIntosh, are a wonderful sight at the present time. The house stands on an elevation considerably above the level of the beds, and as viewed from the fine natural terrace the thousands of huge trusses with their gorgeous flowers present a speetacle that is found in few gardens at this time, and of whieh the magnificence could only be depicted by the brush of a great painter. Rhododendrons have been made almost a life-study by Mr. McIntosh, and his knowledge of the varieties is equalled by few private growers. In the beds many scores of varieties are represented, their rich and striking colours harmoniously mingled, and several large standards on the lawn are conspicuously beautiful objects as loaded with brilliant clusters. Nor is the display so transient a one as might be imagined by some. The earliness of some varieties and the lateness of others, with the influence of site and aspect, insure a succession of flowers over a not inconsiderable period. Rhododendrons are in evidence everywhere at Duneevan, even fringing the side of a meadow remote from the pleasure ground, and so freely have they been planted, and so rapid has been their increase, that it is a matter of some difficulty to keep them within bounds.

—— Every care having been exercised to secure a collection of the Best Varieties of Rhododendrons only, it is somewhat an invidious task to select a few for special mention, but the following may be noted as particularly striking :—Michael Waterer, scarlet crimson, represented by a noble standard 10 feet high ; Fair Helen, white, yellow spots ; W. E. Gladstone, rosy red ; Mrs. Russell Sturgis, white, chocolate blotch ; Fastuosum plenum, lilac, semi-double ; Archimedes, rosy crimson, a fine standard plant ; Sigismund Rucker, magenta, black blotch ; Mrs. R. S. Holford, beautiful salmon-pink ; Frederick Waterer, brilliant crimson ; Vivian Grey, delicate pink ; Album Triumphans, soft blush, fine truss ; Kate Waterer, rosy red, greenish yellow blotch, very fine ; Marchioness of Lansdowne, pale pink, conspicuous dark blotch ; Mrs. W. Agnew, centre cream, edge soft pink ; Meteor, distinct fiery red ; Purity, white; Sylph, rose, without blotch ; Doncaster, brilliant crimson, very fine ; King of Purples, purplish mauve ; Lady Armstrong, soft rose, very large fine truss ; Old Port, plum colour ; Helen Waterer, white, red margin ; and Baroness Rothschild, bright rosy crimson. The hardy yellow Azalea Nancy Waterer shows to great advantage amongst the shrubs.

—— The Trees and Shrubs at Duneevan are also worthy of a note. To begin with, there is a grand old Oak, with a girth of 24 feet just above the roots ; a fine Purple Beech, of which the spreading branches add a distinct feature to the garden ; and noble specimens of Abies Albertiana, Cupressus Lawsoniana, and C. L. erecta viridis, the latter the finest specimen in the country. As a background to the Rhododendrons, the purplish blooms of Magnolia Soulangeana and the abundant racemes of some fine Laburnums perform their duty in a highly effective manner. There are many other features of interest in this beautiful garden, as might be expected from the fact of Mr. McIntosh's keen interest in horticulture being supported by the work of an able gardener, Mr. T. Taylor.

—— The annual Summer Show of the Twickenham Horticultural Society will be held on Tuesday, July 10th, in the grounds of Orleans House, the residence of W. Cunard, Esq., who has again placed ample space at the disposal of the Society for the purpose, and a better situation could not be desired. The schedule enumerates seventy-nine classes for plants, cut flowers, fruit, and vegetables, the prizes ranging from £4 downwards. The Hon. Secretary is Mr. J. F. G. Pugh, 2, Heath Road, Twickenham. It is expected that a characteristically beautiful show will be provided by the numerous supporters of the Society in the district.

—— Messrs. Hooper & Co. have an admirable exhibition of Gloxinias in the Pine Apple Nursery, Maida Vale, this week. The plants are tastefully arranged with Ferns to form a long bank in a house near the conservatory, with groups of Masdevallias at one end and Cypripediums at the other. The flowers are of good size and form, representing rich shades of scarlet, purple, and crimson, in contrast with the pure white Avalanche, and a great diversity of flowers dotted and banded with bright or dark colours on pale or white grounds. Caladiums, Masdevallias, Odontoglossums also fill several houses, Palms, Dracænas, and general decorative plants of a useful character in all sizes being grown by thousands.

—— At Selborne, Leigham Court Road, Streatham, the residence of J. Southgate, Esq., an excellent display of Calceolarias is now provided. The gardener, Mr. C. J. Salter, having giving special attention to these plants for some years, has succeeded in forming a fine and varied strain, distinguished by the compact habit of the plants, the large size and good form of the flowers, the colours of which vary from the richest velvety crimson to pure yellow. Some are beautifully mottled and veined, and this diversity indicates the care with which the seed-bearing plants have been selected. One house is filled and part of another structure is also occupied with the plants, which are as well grown as in previous years, and this, as all who have seen them know, is ample praise.

—— We are informed that the Alexandra Palace Rose Show will be held on June 27th and 28th next, under the management of Mr. R. Beale. Liberal prizes will be offered, and the prize money will be paid at four o'clock on the first day of the Show. Schedules are in the press, and it is also proposed to have fruit, vegetable, and Potato shows, cut flowers, and finally a good Chrysanthemum show in November.

—— At the ordinary meeting of the Royal Meteorological Society, to be held at 25, Great George Street, Westminster, on Wednesday, the 20th inst., at 7 p.m., the following papers will be read :—"First Report of the Thunderstorm Committee—On the Photographs of Lightning Flashes," drawn up by the Hon. Ralph Abercromby, F.R.Met.Soc. "The Cold Period from September, 1887, to May, 1888," by Charles Harding, F.R.Met.Soc. "Observations on Cloud Movements near the Equator, and on the general character of the weather in the Doldrums," by the Hon. Ralph Abercromby, F.R.Met.Soc.

—— Gardening Appointment.—Mr. F. Betts, outside foreman at Mentmore, succeeds Mr. Page as gardener to A. Southard, Esq., Fern Lodge, Bracknell, Berks.

—— Mr. C. Rapley, so well known as an improver and raiser of Calceolarias at Bedford Hill House, Balham, has now an attractive display at The Cedars, Upper Tooting, the suburban residence of T. P Parr, Esq., to whom Mr. Rapley is gardener. The plants are not so large as we have been accustomed to see them, a chief object having evidently been to have as many varieties as possible in the space at disposal, and there is not an inferior one among them. Some of the plants are extremely dwarf, stakes being quite unnecessary for their support, and a crimson velvet coloured variety forms an excellent companion to the cloth of gold.

—— Mr. John Lovel, Strawberry grower, Driffield, sends the following on Barren Strawberries :—"It is a general cry this season in many places throughout the country that Strawberries are showing no flowers. We attribute this to immaturity consequent on the very dry summer and backward spring. There should be no difficulty in making the plants fruitful next year by encouraging early and complete maturity, and by stimulating the growth of fibrous roots, the two important essentials necessary for fruit production. Do not dig the plants up. Old plants fare worse than young ones, as they have weaker rooting powers and a greater quantity of crowns to mature."

—— Mr. Hugh Hanan sends us from Edinburgh samples of his Perfection Protecting Late White Broccoli. They were advised as having been sent by express on the 7th inst., and reached us on the 11th not in the best condition through their long confinement." The heads are quite large enough, and as good as any we have seen so late in the season. Mr. Hanan describes the variety as one of the hardiest with which he is acquainted with in the north.

—— It is announced that an International Iron and Metal Trades Exhibition will be held in the Royal Agricultural Hall, London, on November 12th to 24th of the present year, in which provision will be made for the display of horticultural implements and appliances. The Exhibition, however, is intended to be of very large scope, and to embrace articles pertaining to nearly all trades and households. Mr. Harry Etherington, who has had much experience in the conduct of exhibitions on a large scale, is the manager of the one projected, which is expected to be of great extent and wide interest. His address is 43, New Oxford Street, London, W.C.

—— Flowers in Germany.—It is said that "since the Empress Victoria inhabited Charlottenburg the rooms of the Palace are daily decorated, under her own direction, with the most splendid flowers, which in early spring were mostly sent from Italy. For the wedding of Prince Henry ten clever flower-wreath makers, assisted by ten soldiers, were employed in preparing flowers for the festivities. The flowers came partly from the garden of the palace and partly from Berlin florists. The ground of these decorations was chiefly formed of Elder flowers in immense masses, as they grow abundantly in the park, and a quantity of valuable china vases were called into requisition. On the staircase great imitation malachite vases were filled with Roses, which were also to be seen everywhere. The corridor between the rooms inhabited by the Emperor and Empress was beautifully draped with red stuff, blooming plants, and green bushes; tall Palms behind, and a row of Azaleas, and then of Elder, Lilies, Narcissus, and Hawthorn in front. In the chapel the niches behind and beside the altar were filled with Roses, which were also spread over the railings. The rooms of the bride showed a sea of blossoms, while the Royal table in the dining hall was adorned with cushions of Elder flower, on which eight large silver dishes and as many plates were filled with Roses, Lilies, Gardenias, and Orchids. Besides these eighty-eight glasses filled with flowers, and many pots of living plants, were spread over the table, and from one to the other wound a wreath, while before each of the hundred seats was a bouquet of Orange blossom. On the south wall stood the mighty basket of Roses sent by the town of Charlottenburg, above a pyramid of Orchids sent by Frankfurt-on-Maine."

—— A Plea for the Sparrows.—A paragraph has been going the round of the daily papers to this effect:—"An almost unprecedented attack of maggot has taken place in the Kentish fruit plantations, and Nut and Apple crops have been in many instances grievously damaged, if not destroyed. Planters are making vigorous efforts to fight the pest, but the grubs are so numerous that hitherto they have defeated all attempts to get rid of them. The increase of insects is said by the farmers to be due to the scarcity of sparrows, owing to the wholesale slaughter of the birds which has been carried on in the district."

—— Drying Flowers in their Natural Colours.—Dr. Schonland gives in an Indian paper the details of his system of drying flowers:—"Take two pints of a saturated solution of sulphurous acid in water (which can be had at any chemists, and is very cheap if bought in large quantities); add to this one pint of methylated spirit. Keep this mixture in a wide-mouthed bottle, which should be so tightly closed that the contents do not evaporate when not in use. Leave ordinary flowers in this mixture for about ten to twenty minutes; inflorescences of Bromeliaceæ and Aroideæ must be left in it about one hour. In most cases the colour will completely disappear, but it will gradually return during the process of drying, or even after the plants have become apparently quite dry. Having treated the specimens with the mixture for a short time as stated above, take them out and shake off the adhering drops of fluid. Leave the plants in a dry warm place, in order to dry them superficially (they must not be allowed to shrivel), and then dry them in the usual way between blotting paper. If artificial heat is used in the latter part of the process, excellent results are obtained, and it is not even necessary to change the drying paper. If hot-water pipes are available it is very convenient to place on them the the bundle containing the plant to be dried, which need not be subjected to very great pressure. As it is sometimes difficult to prevent flowers from collapsing when using this method of preservation, and as often it is almost impossible to spread out those flowers when they have collapsed, I often put them loosely between sheets of vegetable parchment before immersing them in the fluid."

—— Landscape Gardening.—This division of the Crystal Palace School of Art, Science, and Literature is carried on in Mr. Milner's offices, situated on the Aquarium Terrace, Crystal Palace. The student secures both theoretical instruction and the advantage of practical outdoor work. During the employment of the student in practical work, a certain salary may be allowed. The profession which undertakes to improve land, and enhance its value by artistic and scientific treatment other than agricultural, has two main divisions:—I. Creating and arranging natural beauties of landscape, to adorn land for ornamental or recreative purposes, parks or gardens, public or private; including the architectural, engineering, and gardening works incidental thereto. II. The treatment of estates for remunerative purposes, such as planning and development for building, with incidental engineering and other works, whether voluntary or public and statutory. Prospectuses for either division of the school of art, science, and literature can be supplied, and students can inscribe their names only in the office of the school, in the library, Byzantine Court, Crystal Palace.



ORCHIDS AT ST. MARGARET'S.

At The Baron's, St. Margaret's, Twickenham, Mr. H. Little has an extensive collection of Orchids, which is, however, especially noted for Lycaste Skinneri, the Cattleyas and Lælias comprising remarkably fine plants and varieties in all these genera.

The Lycastes as a collection are probably scarcely equalled, and though the flowers are nearly over now, a display has been provided from November until the end of May, at least 1000 flowers having expanded in that time. The plants are extremely strong, and have had from ten to sixteen flowers from one pseudo-bulb, ten or twelve each being a common occurrence. One plant of a magnificent variety named grandis has had thirty flowers open at one time, and there are many other beautiful varieties, from the pure white form through numerous delicate tints to the deepest rosy crimson. A lean-to house, 140 feet long, is chiefly occupied with the Lycastes and Cypripediums, C. superbiens being a favourite, and all are well grown.

Another range of similar size contains the Cattleyas and Lælias, of which Mr. Little is justly proud, and like the other plants they are evidently thriving under the care of the attentive gardener, Mr. Hill. Some specimen Cypripediums are also noteworthy in that house, C. Lawrencianum having forty large flowers, and C. barbatum superbum fifty richly coloured flowers. Of Cattleyas Mossiæ, Warneri, Sanderiana, Mendeli, and Skinneri there are some good plants. One superb example of C. Sanderiana on a Tree Fern stem in a pan has forty grand flowers; C. Skinneri has thirteen racemes of seven and eight flowers each; and C. Mossiæ aurea, a pretty distinct variety, has thirty-two flowers. C. Mendeli Mrs. H. Little is one of the finest varieties of that section, and has been honoured with two certificates; the petals are broad and erect of a deep rosy colour, the lip open, white tipped crimson. C. Mendeli grandis has also been certificated, and is very handsome, the flower of great size, excellent shape, and the lip beautifully frilled. A most valuable plant is Lælia elegans Littleana, which was certificated by the Royal Horticultural Society in 1885. The plant is a strong one with seven pseudo-bulbs, its flowers large and peculiarly rich in colour. At the time of my visit there were nearly 1100 Cattleya and Lælia flowers expanded, and this will give some idea of the display.

Pelargoniums have long been specialties with Mr. Little, and some admirable specimens are advancing now that will no doubt figure conspicuously at Richmond, Twickenham, or other Shows in the district.

CYPRIPEDIUM GODEFROYÆ.

A singularly beautiful variety of Cypripedium Godefroyæ is flowering in one of Mr. R. H. Measures' Orchid houses at The Woodlands, Streatham, and it presents an interesting resemblance to the new C. bellatulum, but with smaller and fewer spots. The plant has ten flowers of exceptional size for C. Godefroyæ, the petals and dorsal sepals very broad and rounded, heavily spotted on a cream-tinted ground, with a neat lip after the C. niveum style. Mr. R. T. Measures of Camberwell has another variety with a white ground more nearly approaching C. niveum, and the intermediate forms between that species, C. Godefroyæ, C. concolor, and C. bellatulum constantly appearing show that they are nearly allied. —L. C.

THE CHELSEA AND COOMBE WOOD NURSERIES.

An hour or two can always be advantageously and pleasantly spent in Messrs. J. Veitch & Sons' nurseries in the King's Road, Chelsea, and at Coombe Wood, but note-taking wanderers more seldom visit the latter, not because it is devoid of interest, but because it is not quite so quickly or conveniently reached as the Chelsea establishment, with which all are so familiar. The following remarks will therefore be devoted to indicating the leading features of the two nurseries at the present time, what may be termed the Veitchian June show, for nearly

every month has its special attractions where the collections of plants are so extensive and varied.

ORCHIDS.

Commencing at Chelsea the Orchids first demand a few observations for there is now an unusual display of flowers in all the houses, which means that some thousands of plants are contributing to the production of a brilliant effect. The great span roofed Cattleya house contains an assemblage of handsome healthy plants, affording abundant flowers of Cattleyas and Lælias in innumerable fine varieties. Cattleyas Mossiæ, Mendeli, Warneri, and Skinneri, with Lælia purpurata, constitute the major portion of the flowering plants, and some of these are very beautiful, with twelve to twenty large flowers each, or in the case of C. Skinneri the latter number is far exceeded. The varieties of C. Mossiæ and C. Mendeli are most numerous, including some of the best in form, size, and colour of the flowers, but they are rarely considered distinct enough for varietal names, their relative merits being indicated by crosses on the labels. This is a simple and effectual method, preferable to bestowing names upon every trifling variation that may appear in a collection. The C. Mossiæ forms in particular are wonderfully good, the lips superbly marked, the sepals and petals broad and highly coloured, fine bold well developed flowers. The C. Mendeli group comprises similarly charming varieties, the colours rich and clearly defined. C. Warneri presents an excellent contrast with the lighter forms of the preceding, the sepals and petals being of a deep purple tint, the lip white and golden in the centre, the upper half rich crimson. The profuse C. Skinneri is gay with its bright hued flowers, and the noble Lælia purpurata is conspicuous everywhere. That grand variety of the last named—*i.e.*, L. purpurata Russelliana, is in admirable condition, one plant having four racemes of four or five large flowers each, the sepals and petals pure white, the lip broad, white in the centre, and charmingly veined with purple in the upper half. This magnificent house has been extended to meet the long range of Phalænopsis, Lycaste, Angræcum, and Odontoglossum houses, so that the whole series of Orchid houses can be inspected without passing out of doors—a decided improvement.

The Cypripedium house adjoining the fernery contains a large number of flowering plants, C. selligerum majus being in strong force, some of the plants having twin-flowers. A contrast of majus with the typical selligerum, also in flower, proves at a glance how greatly superior the former is to the latter. The beautiful C. Veitchi, or superbiens, is flowering freely, with C. superciliare, C. barbatum, C. Parishi, and C. Druryi, with yellow flowers, and a reddish central vein in the petals and dorsal sepal. The new C. bellatulum, the magnified C. Godefroyæ, with intensely deep bold spots, is a valuable addition to the group of allied Cypripediums. C. grande is handsome, and some of the young flowers have petals 13½ inches long, so that they will probably exceed this when they are mature, and nearly approach C. caudatum, which has petals 24 to 30 inches long. Though not in the same house, a hybrid Cypripedium, named C. Tautzianum, is flowering in one of the private departments that merits a special word or two of description. It resulted from a cross between C. niveum and C. barbatum, presenting a most interesting and beautiful combination of the characters of these species. The whole flower is 3½ inches from tip to tip of the petals, the latter being three-quarters of an inch in diameter, tinted, and veined with crimson, purple, or white, but the dorsal sepal is particularly handsome, nearly 2 inches across, white, charmingly veined with a fine crimson-purple tint, and having a few greenish veins at the base. The lip is like a large C. niveum, neatly formed, white on the under surface, and tinged with rosy crimson above. A plant of this hybrid was shown before the Royal Horticultural Society's Floral Committee, January 10th this year, when a first-class certificate was awarded, and though necessarily scarce at present it will become a great favourite owing to the distinctness and pleasing brightness of its colours.

Dendrobiums include scores of plants of thyrsiflorum, Deari, suavissimum, chrysotoxum, Jamesianum, Dalhousieanum tortile, Cambridgeanum, Parishi, and Bensoniæ, which fill one house of the range. The last two named are very handsome, a plant of D. Bensoniæ having three pseudobulbs crowded with white flowers tinged with yellow and having dark spots in the lips. D. Parishi is similarly distinct, the flowers deep purplish crimson, and two dark blotches in the lip. An interesting hybrid Dendrobium is noteworthy—namely, D. porphyrogastrum, which was recently shown at Westminster. It was obtained from a cross between D. Huttoni and D. Dalhousieanum, two very dissimilar species both in habit and flowers, the former having thin straw-like stems and small flowers, the latter a giant both in growth and flowers. The hybrid partakes curiously of both parents' characters, and is really a great improved D. Huttoni. The miscellaneous warm-house Orchids in flower are too numerous to name individually, but Aerides, Saccolabiums, Dendrochilum latifolium, Thunias, Oncidiums, Sobralias, Anguloas, Angræcums, and Calanthes. The cool house is remarkably gay with Odontoglossums, numberless fine varieties of crispum, Pescatorei, cirrhosum, vexillarium, maculatum, cordatum, and Cervantesi being represented, and contrasting with Masdevallia Harryana and Veitchiana, Epidendrum vitellinum, Oncidium nigratum, O. hastatum, O. leucochilum, and others.

GLOXINIAS.

For many years Messrs. Veitch & Sons have given special attention to the improvement of Gloxinias, and they have not only succeeded in securing varieties of marked excellence that have been deemed worthy of names, but they have formed a mixed strain of considerable merit; the result, in fact, of intercrossing all their best varieties in the different colours. The display provided at the present time of these plants testifies in a very satisfactory manner to the care which has been exercised in the selection or crossing, and in the cultivation of the plants. A span-roof house in two divisions 120 feet long is exclusively devoted to Gloxinias, and they afford an extremely rich effect, the bright and soft colours being well proportioned and the arrangement tasteful. Only a few of the named varieties can be mentioned, as all are good, and each one has some special character to recommend it. A trio of brilliant scarlet varieties are Comet, Flambeau, and Irma, the flowers well formed, the colour pure and bright, and the habit good; the first, having a white tube, shows up admirably. In contrast to these is the pure white Virginale and the deep rich purple, The Moor, which arrests attention everywhere, and is most conspicuous amongst the lighter varieties. Other good forms are Celia, edged purple; Cygnet, pure white ground and throat, margined with delicate pale purple, very pretty; Sunbeam, scarlet, light centre; Jubilee, spotted purple, handsome; Cordelia and Jeanne Muret are two other beautiful spotted varieties; Argus, large, handsome flower, spotted with red; Estella, delicately spotted and veined with purple, capital shape; Delicata, margin white, rosy red zone and veins; and Orestes, dark scarlet, a massive, finely proportioned flower. Well-grown Gloxinias are most valuable at this time of year, and some delightful groups can be formed of them arranged with Adiantums.

GREENHOUSE RHODODENDRONS.

Few weeks pass in the year without finding some of the greenhouse Rhododendrons in flower, for which the Chelsea Nursery is so famed. Not only is the stock of proved varieties or hybrids an extensive one, but such numbers of seedlings have been raised that novelties are constantly flowering that possess some distinctive merits. Several of these are now flowering for the first time, and are interesting in several respects. The well-known white long-tubed R. jasminiflorum, R. javanicum, R. Teysmanni, and the varieties Princess Royal and Princess Frederica have been employed with R. multicolor Curtisi, an introduced variety with narrow leaves and small deep red short-tubed flowers, almost suggestive of some of the small Azaleas. One of the plants from Princess Royal and multicolor Curtisi has rosy crimson flowers, the colour of Curtisi and the shape predominating. A second from jasminiflorum and Curtisi has bright red flowers with tubes longer than the latter parent, and it might almost be termed a small red jasminiflorum. From javanicum and Curtisi a plant has been obtained with the foliage of the former and the flowers of the latter, both in shape and colour. A fourth cross is particularly interesting; it is from Princess Royal crossed with Teysmanni, having large orange buff flowers, the latter parent predominating in foliage and flowers, while in the first cross mentioned from Princess Royal and Curtisi the latter predominated in a similar manner, though the seed was obtained from the same plant in both cases. Another of the Teysmanni type was raised from seed borne by Princess Frederica, the flowers large, pale creamy buff, delicate and handsome. An older form, Star of India, is also flowering, having a large compact head of brilliant orange flowers, the petals round and broad. Three double varieties of the javanicum group of Rhododendrons have now been secured, one of the finest of which is R. balsaminæflorum album, double white, very pure, and of good shape (fig. 65, kindly lent by Messrs. Veitch and Sons). R. balsaminæflorum aureum is a golden form of the same type, and carneum has handsome rose-tinted flowers of excellent shape. These are all valuable additions to the greenhouse Rhododendrons, as the flowers last capitally when cut, and look well in bouquets or buttonholes.

MISCELLANEOUS.

In one of the new plant houses is a new Fern that is likely to be both useful and ornamental. It is named Gymnogramma Pearcei robusta, and is a strong "sporeling" from the much more delicate and less satisfactory species. The fronds are of moderate good shape, and finely divided into linear segments. It is free growing, and quite small plants are well furnished with graceful lace-like fronds. The Anthuriums are bearing numbers of their bright spathes, but especially A. Schertzerianum varieties like Wardi. A. Rothschildianum is also in good condition, now showing many forms varying in the size or shape of the spathes and the mottling. In some there is a clear white ground on which the scarlet dots or marbling show up very distinctly, and in others the markings are more confluent with less white. All are striking, but the former are preferable, and some are beautifully marked. It may be remembered that Anthurium Rothschildianum was the result of a cross between A. Schertzerianum and A. Schertzerianum album, which was obtained by Messrs. Veitch & Sons and M. Bergman, Ferrières Gardens, about the same time, but the French plants flowered first, and it was then named. Of the first batch of Chelsea seedlings, one-half came spotted or intermediate between the parents, but from a subsequent batch only one in twenty came spotted, all the others being the ordinary red varieties of A. Schertzerianum.

With the flower house, which is bright with Pelargoniums, Rhododendrons, Roses, Spiræas, Azaleas, Ericas, and Hydrangeas, and fragrant with Mignonette and Heliotrope, we must quit the Chelsea Nursery and hurry to Coombe Wood for a few notes on the

HARDY RHODODENDRONS AND AZALEAS.

A visitor at Chelsea can proceed to Coombe Wood without much difficulty, as there are frequent trains to Clapham Junction and thence to Norbiton on the Kingston line, which is twenty minutes' or half an hour's walk from the nursery. This is situated partly in a valley and partly on the hill sloping to the south from the Kingston Road, conse-

quently commanding a variety of positions, soils, &c., to suit the various occupants, besides some pretty cross-country views to render the nursery more interesting to strangers. Much could be said about the wonderful collection of rare or beautiful trees and shrubs which flourish at Coombe; but my mission was to see the Rhododendrons and Azaleas, and to them I must confine my notes this week. Looking down upon the slopes from the higher ground the brilliant patches of colour afforded by the plants named have a remarkably beautiful effect, the Azaleas in particular glowing in the sun as if illuminated by coloured fires. Some of the Rhododendrons are also bright, but for distant effect they are lost beside the Azaleas of the Ghent and mollis types. The rich and pure tints of the former are, however, very notable, and the following are selected as the most telling or useful of the large collection.

Rhododendrons.—Baron Schröder, deep purplish, yellow centre; Countess of Normanton, pale rose with dark markings; Decorator, brilliant scarlet, very effective; Frederick Waterer, rich crimson, most showy; James McIntosh, rosy scarlet; James Marshall Brooks, dark scarlet with a dark blotch; John Walter, a handsome crimson variety, one of the best; Joseph Waterer, purplish crimson, very dark; Kate Waterer, rosy crimson, lighter centre, beautiful; Lady Annette de Trafford, blush with chocolate blotch; Lord John Russell, rosy mauve, finely spotted, free and effective; Madame M. Carvalho, pure white large compact truss, free, one of the best; Marchioness of Lansdowne, pale rose, dark spots; Michael Waterer, rosy scarlet, a good variety; Mrs. Holford, salmon, fine truss; Mrs. John Clutton, pure white, an excellent variety of good habit; Mrs. John Penn, rosy salmon, bright margin and light centre; Mrs. Shuttleworth, scarlet, light centre; Mrs. Tom Agnew, white blotched pale yellow; Old Port, rich deep purple, a fine contrast to the lighter colours; Purity, white, yellow centre, good; Sappho, white with maroon markings, truss large and flowers well formed; Scipio, rose with a dark spot; Sigismund Rucker, magenta with a dark blotch; Snowflake, pure white, flower large; The Crown Prince, bright rose with a lighter blotch, truss and flower large; Vivian Grey, rosy lilac, dark spots. Besides these the old varieties of the catawbiense type, Everestianum, with pretty lilac coloured fringed flowers; fastuosum flore-pleno, of similar colour; and purpureum elegans, very dark rich purple.

The plants are in all sizes, from those three years old, which in some cases, as with Mrs. John Clutton, bear from eight to twelve fine trusses on compact little specimens, to substantial bushes, and standards 6 to 8 feet high. The small plants are well furnished, and the right size for beds, where immediate effect is required. The standards are exceptionally fine, with clear stems 2 to 3 feet high, and well proportioned heads. For cover planting and similar purposes R. ponticum is grown in quantity, but of many the named varieties are now so cheap that they are often used for woodlands and conspicuous situations.

Azaleas.—The Azaleas comprise the old varieties of the nudiflora or calendulacea types, together with the newer forms of Azalea mollis, but in richness of colours and powerful fragrance the older American Azaleas are unequalled, though the mollis varieties have much larger flowers. Of the old forms a few may be named as specially worthy of general culture. Belle Merveille, reddish orange, very brilliant; Altaclerensis, one of the oldest, but still one of the best, the flowers are yellow with an orange tinge; Daviesi is the best white, very free; Leopold I. has long tubular flowers, rosy blush tinted yellow, suggestive of Honeysuckle, dwarf and free; coccinea speciosa, brilliant orange scarlet, one of the most effective; Marie Verschaffelt, rose and yellow; Grand Duke of Luxembourg, rosy dark bright red; Directeur Charles Baumann, Joseph Napoléon Baumann, and Madame J. Baumann are also leading varieties in this section of similar colours to those named.



FIG. 65.—RHODODENDRON BALSAMINÆFLORUM ALBUM.

The remarkable collection of Conifers, hardy trees, and shrubs, the beautiful varied Japanese Maples and other plants must be reserved for subsequent notes, but one handsome tree, Styrax Obassia, from Japan, then coming into flower, well deserved the certificate since awarded for it by the Royal Horticultural Society (see page 493). For the foliage alone this is worth a place in gardens, and it has proved quite hardy at Coombe Wood upon a slope in a rather exposed position.—RECORDER.

ROYAL HORTICULTURAL SOCIETY.

JUNE 12TH.

THE meeting of this Society's Fruit and Floral Committees on Tuesday last in the Drill Hall, James Street, Victoria Street, was exceedingly well attended by exhibitors of plants and flowers, forming one of the most interesting and diversified displays provided in the new quarters. Four stages extending nearly the full length of the hall, and a fifth across at the top of these, were filled with groups of plants or collections of cut flowers, at least three-fourths of the space provided being occupied by the numerous and important contributions from nurserymen.

FRUIT COMMITTEE.—Harry J. Veitch, Esq., in the chair; and Messrs. John Lee, Harrison Weir, R. D. Blackmore, Sidney Ford, C. W. Cummins, C. Howe, G. T. Miles, W. Warren, W. Marshall, J. Roberts, J. Smith, J. Wright, and Philip Crowley. As is usual at this period of the year the duties of the Committee were light, and the members availed themselves of the time afforded for inspecting the plants and flowers, the display being one of the most varied and effective yet provided in the hall. First to be placed on the fruit table were some large and very handsome Melons from Mr. M. Gleeson, Clumber Gardens, Notts. The variety is the result of a cross between Luscious and Melting and Hero of Lockinge; fruit roundish to oval, skin thin, pale yellow delicately netted, flesh white, sweet, and juicy, but not highly flavoured. The fair quality of this Melon, combined with the superior appearance of the fruit, led the Committee to record it as a good one for market purposes, but not equal to Hero of Lockinge in flavour. Mr. George Munro, the well-known salesman, has found the fruits acceptable in Covent Garden. Mr. Miller, gardener to Lord Foley, Bexley Lodge, Esher, was adjudged a vote of thanks for a dish of dark coloured unnamed Peaches. Mr. G. Haslett, Queen's Road, Tunbridge Wells, sent a twin Cucumber, or two fruits about 18 inches long, united their entire length, a circumstance not uncommon; yet the example was sufficiently good of its kind to merit a vote of thanks. Mr. T. Lockie, The Gardens, Oakley Court, Windsor, again sent fruits of his Perfection Cucumber. The six specimens were as uniform as if they had been cast in a mould. They were a foot long, faultless in shape and proportions, scarcely ribbed, green, covered with a dense bloom, and were considered models of table Cucumbers, especially as the quality was highly satisfactory. A first-class certificate was unanimously granted. The variety appears intermediate between Cardiff Castle and Sion House, and, kept true, can scarcely fail to become a popular favourite.

FLORAL COMMITTEE.—Present: G. F. Wilson, Esq., F.R.S., in the chair; and Messrs. J. Laing, G. Nicholson, H. Herbst, W. Bates, T. Baines, C. T. Druery, R. Dean, C. Noble, C. Pilcher, H. M. Pollett, J. O'Brien, A. J. Lendy, B. Wynne, H. Ballantine, E. Hill, W. Goldring, Shirley Hibberd, W. Wildsmith, James Walker, and the Rev. W. Wilks.

From the Royal Gardens, Kew, a group of extremely interesting but not showy plants were sent, every one of which possessed some special character deserving of notice, but only the following can be mentioned here. Masdevallia muscosa, a curious small-flowered species from Colombia, with long peduncles closely set with glandular hairs, which apparently suggested the specific name; Delphinium triste, a particularly "sad" looking plant, the flowers very dark and dull, almost black; Primula japonica alba, a pure white-flowered variety; Lissochilus Krebsi, an Orchid with singular yellow and brown flowers; Smilacina stellata, a Liliaceous plant with graceful panicles of small white flowers; Musa coccinea, very showy, with a head of scarlet bracts and flowers; and Thunbergia mysorensis, flowers yellow and reddish brown in long drooping racemes. Several varieties of Water Lilies were shown, including the handsome large white Nymphæa Lotus, the bright rosy red and equally beautiful N. kewensis, a hybrid between N. Lotus and N. devoniensis, raised at Kew, and N. tuberosa flavescens with yellowish flowers. The charming Nympheas are well grown at Kew, the old Lily house near the Palm house being devoted to them, and in spacious circular tanks of that kind they are seen to much better advantage that when cramped in a small rectangular tank. Other notable plants were the yellow Composite, Venidium speciosum, the wax-like Rhododendron Blandfordianum, the Heath-like white Pentaptera sicula from Sicily, the golden Onosma taurica, the scarlet Delphinium nudicaule, and the pretty Saxifragas valdensis, and Hosti var. McNabiana.

Sir Trevor Lawrence, Bart., M.P., Burford Lodge, Dorking (gardener, Mr. Bickerstaffe), had a group of choice Orchids, including Trichopilia crispa marginata, with fine rosy claret coloured flowers; Masdevallia Harryana regalis, the flowers of brilliant colour and good shape; Cypripedium Stonei grandiflorum, with large handsomely marked flowers, inferior only to platytænium in the breadth of its petals (vote of thanks); Vanda Lindeni, something like V. Roxburghi in the size and shape of the flowers, the sepals and petals yellowish, with a bronze centre and a small lip; Cypripedium Wallisi, with green striped sepals and long drooping narrow petals; and grand specimens of C. superciliare with fine large flowers, and C. Swannianum, having twenty beautifully delicate flowers. Baron Schröder, The Dell, Egham (gardener, Mr. H. Ballantine), exhibited a fine plant of the white Cattleya Wagneri superba (certificated), and the beautiful pale yellow Sobralia xantholeuca (vote of thanks). The Rev. J. P. Way sent a plant of the yellow and bronze Oncidium Gardneri (vote of thanks). G. Nevile Wyatt, Esq., Lake House, Cheltenham (gardener, Mr. Simcoe), exhibited the original plant of Lælia Wyattiana, described by Reichenbach, one of the L. purpurata type, the sepals and petals pure white, the lip tinged with purple. H. M. Pollett, Esq., Fernside, Bickley, sent a plant of an extremely fine variety of Odontoglossum Halli, named magnificum (certificated), and Cattleya Mendeli bickleyensis, a variety having white sepals and petals, the lip crimson in the centre and margined with white. From Blenheim came a plant of a dark variety of Lælia purpurata, named blenheimensis, the sepals and petals deep purple, the lip rich crimson.

G. F. Wilson, Esq., Heatherbank, Weybridge, contributed several interesting hardy flowers, amongst them being specimens of the Edelweiss; Cypripedium spectabile; the bright red, graceful Heuchera sanguinea; the drooping pale yellow Primula sikkimensis; the tall, brighter P. prolifera; the dwarf Hypericum scabrum, and a plant of Drosera binata. Mr. G. Bolas, Hopton Hall Gardens, Wirksworth showed flowers and leaves of a white Nelumbium, with a coloured sketch of the same (vote of thanks). T. W. Girdlestone, Esq., sent flowers of the beautiful Fortune's Yellow Rose, bronzy yellow deeply tinged with rose, the blooms fresh and of good size. S. Barlow, Esq., Stake Hill House, Manchester, sent a few flowers of florists' Tulips, representing bizarres, byblœmens, roses, and breeders (vote of thanks), all bright and beautiful, and sufficient to excite the wish that they were more frequently exhibited in the metropolis. Mr. F. Ross, Pendell Court Gardens, Bletchingley, exhibited some branches of Mackaya bella, laden with pale lilac and dark veined flowers (cultural commendation); also flowers of Rosa lutea punicea, the single scarlet Austrian Rose, and Fortune's Yellow Rose, both handsome; and W. Clay, Esq., Grove Road, Kingston (gardener, Mr. W. Hibburt), sent a group of Pelargoniums in pots. A group of double and single Ivy-leaf Pelargoniums from the Chiswick Gardens occupied a long cross table, the varieties comprising some of the best of the old and new introductions, well grown and flowering freely.

The nurserymen's exhibits were groups of Orchids, Gloxinias, Begonias, and miscellaneous plants, with collections of cut Rhododendrons, Azaleas, Pyrethrums, Irises, which were beautifully represented, and various hardy flowers. Messrs. H. Low & Co., Clapton, exhibited more largely than customary, contributing a handsome group of Orchids (silver-gilt Banksian medal), and a group of dwarf Heaths (silver medal). Amongst the Orchids were several varieties of the new Cypripedium bellatulum, one of which, named roseum, was certificated; C. Sanderianum, with long drooping narrow twisted petals; Vanda Roxburghi, with small bronzy sepals and petals, and a lilac lip; Cattleya gigas Sanderiana, Phalænopsis Sanderiana, P. gloriosa (certificated), Vanda teres, Cypripedium Lawrencianum, Dendrobium Bensoniæ, and Odontoglossum crispum varieties were also well shown. The Heaths were chiefly varieties of Erica ventricosa, compact little bushes covered with flowers, the varieties being rosea, coccinea minor, globosa alba, tricolor, and superba, with E. perspicua nana. Messrs. F. Sander & Co., St. Albans, had a group of Orchids (silver medal), comprising a violet dotted Acineta, a dwarf variety of Odontoglossum cordatum named splendens, a large flowered variety of O. nebulosum excellens (certificated), and a wonderful imported plant of Dendrobium Dalhousianum, 4 feet in diameter, bearing seventy-five racemes of eight to ten flowers each, large creamy buff, with two rich crimson blotches on the lip. This was an extraordinary specimen, one of the finest ever exhibited. A beautiful group of Orchids and foliage plants from Mr. B. S. Williams, Upper Holloway, secured a silver Banksian medal, and a collection of Intermediate Stocks, named Crimson Gem, of very rich colour and compact habit, was recognised by a vote of thanks. The bold Sarracenia Williamsi (certificated), and Asplenium amboynensis, having long spreading fronds, 2 inches wide, were other novelties from the same exhibitor.

Messrs. J. Veitch & Sons, Chelsea, exhibited plants of the Gloxinias noted in another column (vote of thanks), also twelve baskets of Rhododendrons, Azaleas, Grevillea sulphurea, the white Styrax japonica, and S. Obassia (certificated), and a plant in flower of the New Zealand Aciphylla squarrosa (vote of thanks). Messrs. J. Laing & Son, Forest Hill, showed a group of their handsome double and single Tuberous Begonias, with the pure white Gloxinia virginalis (vote of thanks), and certificates were awarded for two of the Begonias, Camellia and H. Adcock. Messrs. H. Cannell & Sons, Swanley, exhibited some large double Tuberous Begonias, comprising Cannell's Triumph, bright pink, very large; Mr. Miller, double scarlet; and Mrs. W. B. Miller (certificated). Mr. Page, Teddington, sent a large variety of Oncidium crispum named grandiflorum, the flowers deep brown with a yellow base to the lip; and M. Linden, Brussels, showed a large variety of the green veined Dendrobium macrophyllum and a new Anthurium, De Smetianum (certificated).

The miscellaneous collections were as follows, for all of which silver Banksian medals were awarded:—Rhododendrons and Azaleas from Messrs. W. Paul & Son, Waltham Cross; hardy plants, including the large white Rosa sinica, the white Linaria anticaria, and the large purple-rayed Aster diplostephoides, from Messrs. Paul & Son, Cheshunt; handsome single and double Pyrethrums from Messrs. Kelway & Son, Langport; an exceedingly beautiful selection of distinct German Irises from Mr. J. Walker, Whitton; hardy flowers in variety from Mr. T. S. Ware, Tottenham; and Irises from Messrs. Barr & Son, Covent Garden (bronze medal). Messrs. Collins, Bros. & Gabriel, Waterloo Road, had a collection of Pyrethrums; Mr. R. Dean, Ealing, some fine Giant white and scarlet Brompton Stocks; and Mr. Anthony Waterer, Woking, a collection of Rhododendrons and Azaleas (vote of thanks).

CERTIFICATED PLANTS.

Cattleya Wagneri superba (Baron Schröder).—An extremely beautiful plant, with nine large massive flowers, the petals nearly 3 inches in diameter, and, like the sepals, pure white, the lip also white, with a tinge of orange in the throat. A rare and valuable plant.

Odontoglossum nebulosum excellens (Sander & Co.).—Notable for the large size of the flowers, which are 3½ inches in diameter; the petals and sepals brown, heavily dotted with dull purple.

Phalænopsis gloriosa (H. Low & Co.).—One of the P. amabilis type, which it nearly resembles. The flowers 3 inches in diameter, pure white; the petals broad and rounded, with a few crimson dots at the base of the lip.

Cypripedium bellatulum roseum (H. Low & Co.).—Distinguished

from the form certificated at the previous meeting by the rosy tint running through the flowers, and the more confluent markings.

Anthurium De Smetianum (Linden).—An Anthurium with spathes of the style of A. Andreanum but smaller, dark scarlet, polished and irregular surface, the spadix white.

Styrax Obassia (J. Veitch & Sons).—A small Japanese tree with large roundish irregularly toothed leaves 8 to 9 inches in diameter, the flowers pure white; petals five, acute, in racemes 6 to 8 inches long.

Ramondia pyrenaica alba (Paul & Son).—A variety with pure white or very pale blush flowers, a pretty contrast to the ordinary purple type.

Begonia Camellia (J. Laing & Son).—A handsome double Tuberous variety with full symmetrical flowers, rich bright scarlet.

Begonia H. Adcock (J. Laing & Son).—One of the rosette-formed double Tuberous Begonias, of good shape, and dark scarlet in colour.

Sarracenia Williamsi (B. S. Williams).—A bold plant, the pitchers very large, the lips 5 inches broad, rounded, veined with dark red on green, as also is the tube.

Begonia Mrs. W. B. Miller (H. Cannell & Sons).—A fine double Tuberous Begonia with mauve creamy salmon-coloured flowers of capital shape and substance.

Pyrethrums (Kelway).—*Beatrice*, single, deep rosy crimson, broad florets; *Meteor*, double, dark crimson; and *Vega*, double, yellowish centre, pale blush ray florets, peculiar.

Odontoglossum Halli magnificum (H. M. Pollett, Esq.).—An uncommonly fine variety, the flowers having broad petals and sepals, yellow, boldly marked with brown.

Scientific Committee.—Present, Mr. A. D. Michael, G. Murray, J. O'Brien, H. N. Ridley, Prof. Scott, Prof. Church. Prof. Church in the chair.

Mr. Linden (Brussels) sent for exhibition a plant of Dendrobium macrophyllum, var. Bleichroderianum, from New Guinea. A botanical certificate was proposed by Mr. O'Brien and seconded by Mr. H. N. Ridley. Mr. J. Douglas exhibited a plant of Oncidium, introduced with Odontoglossum triumphans. It was referred to Mr. Ridley for name.

Mr. Wolley Dod sent young leaves of a Weeping Ash which had turned black at the base of the petiole, and fallen off. He thought it might be due to drought, and the matter was referred to Mr. Murray and Mr. Michael. Mr. Wolley Dod also sent an abnormal flower of Campanula Allioni (Villars) with a double corolla, a sport of a typical plant. The Hon. and Rev. J. T. Boscawen sent two Primroses with phyllody of the calyx. Mr. Ridley exhibited two flowers of Catasetum macrocarpum, from a plant obtained by him in Pernambuco, and flowered by Mr. Moore of Glasnevin Gardens. Mr. Veitch exhibited the flowers of a series of Rhododendrons, showing the effect of crossing with R. Teysmanni.

Lily Disease.—Mr. Murray, to whom specimens of diseased Lily stems were referred at the last meeting, reports that from fresh specimens sent him by Mr. Lewis Castle he has been able to determine the disease, which is caused by Ovularia elliptica, and an account of it by Rev. M. J. Berkeley may be found in the *Gardener's Chronicle*, 1881, p. 340.

Gentiana acaulis Varieties.—Mr. Scott reported on the abnormal flowers of Gentiana acaulis, which had five spongy outgrowths on the corolla, corresponding in position to the petals. The microscopic structure showed that they were due to excessive superficial growth of the external tissues, especially the epidermis. The outgrowths showed large irregular intercellular spaces. At many places they had coalesced so as to form closed cavities lined by epidermis. When vascular bundles were present, the position of scylem and phlœm was variable. The upper end of each outgrowth was flattened, and here the bundles, though generally concentric, showed an approximation of the scylem towards the upper surface. There was no evidence that these abnormalities were caused by insects, but if so, the regularity of the outgrowth shows that their attack must have taken place at an early age.

Council Meeting.—At the Council meeting in the afternoon a Sub-Committee was appointed to consider the arrangements of the Society for 1889, and more especially to consider certain proposals made by Mr. Veitch in regard to appointing a Botanical Lecturer to deliver short popular addresses to the Fellows, and other matters of importance and interest. It was decided to ask certain members of the Stock Exchange to form a Committee to work in co-operation with the Society. The question of the early revision of the byelaws was taken into consideration, and a letter from the solicitors was read promising the revised copies at an early date. The suggestions of the Fellows' Committee in regard to Local Secretaries were adopted.

Forty-two candidates were elected Fellows, and Messrs. John Gardner and James Harris were elected Associates.

THE FLORISTS' TULIP.

Time was when the gorgeous late-flowering florists' Tulips were much grown round London. A quarter of a century ago it was possible to see small beds in the rear of some of the houses on or near the Walworth and Camberwell Roads on the south side of the Thames; also at Clapham, Brixton, Hackney, Clapton, Holloway, and other suburbs of the metropolis. John Edwards of Holloway, and the brothers Williams of the City, were noted growers in those days. Groom, Goldham, Glenny, R. J. Lawrence, of Hampton; S. M. Sanders, of Staines; Willmer, of Sunbury, were the leading cultivators in Middlesex. A little farther afield were Charles Turner, of Slough; Joseph Hunt, of Wycombe; R. H. Betteridge, of Abingdon; and Richard Headly, of Shelford, near Cambridge. An exhibition was held annually in London or in some one of the southern counties, probably up to 1870 or thereabouts. We remember seeing one at the Crystal Palace in 1855, and a few years later another at Cambridge, at which Samuel Barlow won the cup for twelve blooms, which had been regarded by some as a certainty for Richard Headly; and while the Tulip has advanced in point of variety, of beauty, and refinement, not a grower remains in the county of Middlesex, once so strong in valuable collections. It would now be difficult to find a bed of rectified Tulips within fifty miles of London.

The florists' Tulip is quite distinct from the early varieties so largely used for the spring decoration of flower gardens. It is both later in blooming and taller in growth. In some general characteristics it appears to be allied to the well-known T. Gesneriana, and what a singular physiology it has! The raiser from seed must wait five years before his seedlings blossom, and it matters not if his seedlings be raised from seed of feathered or flamed parents. When they first bloom they will, with very rare exceptions, bloom simply as self-coloured flowers. In this state they are denominated by florists as breeder Tulips, and some of them are very beautiful. And they will bloom in this self-state season after season until now one and now another, in no rank of order or age, will break or "rectify," as it is termed, into either feathered or flamed flowers, or some form that might be said to combine the two. A singular process goes on, which has been well described by the Rev. F. D. Horner:—"The breeder or mother colour is not simply driven or collected into beautiful markings on the rectified petals, but it disappears from the flower altogether as a mist or veil lifted off. The base colour floods the whole flower with its pure white or yellow, and a new and marvellous colour strikes in to feather or flame the petals." A few years ago David Jackson, of Middleton, flowered a Tulip for the first time from seed which never reached the breeder stage, but appeared at once in the form of a beautiful feathered bybloemen. But it is of very rare occurrence. When the breeders break they may take the feathered or the flowered form; it is all a matter of uncertainty, and they may be good or bad. The handsomest and richest coloured breeders by no means produce the best rectified flowers; in fact, the plainer and weaker colours not infrequently produce the richest rectified blooms.

It is comparatively easy to distinguish the classes of Tulips when they are yet in the breeder state. The class to which they belong is determined by the base colour of the breeder. "If the base is a circle of yellow the flower will be a bizarre; if whity, a rose or bybloemen according to the body colour of the petal. Roses break from breeders having the white base, with pink, red, or scarlet self-coloured petals; bybloemens from a white base, with lilac or slate-coloured petals. Bizarre breeders have reddish and yellowish brown, dull red and mahogany sort of colour on their breeder petal, and occasionally bright scarlet, wherein the flower will break into a red bizarre, a very lovely and more recent development." The broken or rectified Tulips are divided into two main divisions, and these according to the ground colour as well as the markings upon the petals. The bizarres always have yellow grounds; in their petals the markings are laid on in black and red, or in varying tints of brown difficult to describe. The bizarres are both the strongest and the showiest class. The rose and the bybloemen are both white ground flowers, but they differ essentially in the character of their markings. The roses have a pure white ground, the petals marked with some shade of rose, red, or scarlet. This class has been described as "the fairest and gentlest among Tulips, and as if in common consent to this nearly all the varieties bear feminine names." The markings on the bybloemens range from some shade of purple, from light lilac to all but black, and it is the class that is scarcest of good flowers. The foregoing classes are again divided into feathered and flamed flowers; the latter is always feathered as well as flamed. The feather is laid on in beautiful styles of pencilling round the edge only of the petal, but when a beam of colour also runs up the centre of the petal striking into the feather it is then a flamed flower. "The feathering must not 'skip,' that is, break off anywhere round the petal edge before it naturally ceases near the base, nor the flame be scratchy, undecided, or insufficient to strike to the feather. The base of the flower must be pure white or yellow, as the case may be, and the stamens, six in number, each with its bold black anther, must be as pure as the ground colour. The property of purity has been gained after very many years of careful work with seedlings, and is of the greatest importance. Each flower is perfect at six petals, and cannot be exhibited with either more or less, or the circular outline of the cup is spoiled. Petals are to be broad, smooth on the edge, level as possible on the top, and of fine polished surface and substance, and so bending upward from the base as to first form a good shoulder."

Such is a popular description of the florists' Tulip. It is a flower full of interest; fascinating because of its rich beauty, and absorbing because it presents to the view of the vegetable physiologist certain singular phenomena that severely taxes his powers of interpretation.

THE ROYAL NATIONAL TULIP SOCIETY.

June 9th.

The annual Exhibition of the Society took place in The Gardens of the Manchester Botanical and Horticultural Society at Old Trafford, on the above date. The Society has now reached its thirty-eighth year, and Mr. Samuel Barlow, J.P., the President, exactly set forth the character of the present Tulip season when he said it was one of the most extraordinary known during that time. Fine and sunny warm weather, alternated with leaden skies and a low temperature, deepening to frost,

and amid such vicissitudes the flowers had to open as best they could. On his own beds he had more green buds so late as June 9th than buds showing colour. Contrasting 1888 with 1887, Mr. Barlow said that he scarcely before remembered so many good flowers as in the latter year. nor so many bad ones as in the present. The Rev. F. D. Horner had enjoyed a very fine bloom at Kirkby Lonsdale, but his feathered flowers were past, and he could not exhibit as usual, and the absence of Mr. James Thurstan of Cardiff, one of the veterans of Tulip culture, was generally regretted. The flowers were arranged on tables in the new exhibition house, and, as is usual, the breeder varieties were highly attractive from their rich colouring. There were but few striking novelties. Pegg's Seedling, shown by Mr. Barlow, and King of the Universe, shown by the raiser, Mr. W. Dymock, are good additions to a scarce class—the feathered byblœmens. The judging finished, the Judges and exhibitors sat down to a capital luncheon, under the presidency of Mr. Barlow, the Hon. Secretary, Mr. James Bentley, being in the vice-chair. Hearty good wishes were expressed for the future welfare of the Society, and earnest hopes that young growers would come forward to take the place of those who fell out of the ranks through old age and death, and may we not ask, When will a new generation of florists rise up in the south to hold aloft once more the banner of the Tulip? May it be soon, is our hearty wish.

In the class for twelve dissimilar Tulips, two feathered and two flamed in each class, there were five competitors, and Mr. Alderman Woolley, Stockport, was placed first in the bizarres, feathered, Sir Sidney Smith and Sir J. Paxton, the former having so broad a feather as to come under the denomination of a "plated" flower; flamed, Sir. J. Paxton and Dr. Hardy, the latter very bright; roses, feathered Heroine and Mabel; flamed, Triomphe Royal and Mabel; byblœmens, feathered King of the Universe and Jaunette, two flowers raised by Mr. W. Dymock, Stockport, the former a fine addition to a class greatly needing additions; flamed, Chancellor and Walker's Duchess of Sutherland. Second, Mr. J. H. Wood, Royton, Oldham, with bizarres, feathered, Sir J. Paxton and Masterpiece; flamed, the same varieties; roses, feathered, Modesty and Mabel; flamed, Lady Catherine Gordon and Mabel; byblœmens, feathered, Bessie and Talisman; flamed, Friar Tuck and Talisman. Third, Samuel Barlow, Esq., J.P., Stakehill House, Castleton, with small flowers of good character, having bizarres, feathered, General Grant and Sir J. Paxton; flamed, Ajax and a seedling which broke from a mixed bed, and its identity is so far not quite certain; roses, feathered, Modesty and Mabel; flamed, Annie McGregor and Madame St. Arnaud, a somewhat old variety shown in fine colour; byblœmens, feathered, Pegg's Seedling, a very promising flower of marked individuality of character, and Friar Tuck. Fourth, Mr. W. Kitchen, Stockport. Fifth, Mr. A. Moorhouse, Wakefield.

In the class for six dissimilar varieties there were also five competitors, Mr. J. H. Wood being first with bazarres, feathered, Masterpiece; flamed, Sir J. Paxton; roses, feathered, Modesty; flamed, Mabel; byblœmens, feathered, Talisman; flamed, Duchess of Sutherland. Second, Mr. W. Kitchen, with bizarre, feathered, Masterpiece; flamed, San Josef; roses, feathered, Julia Farnese, a heavy plated variety; and flamed, Celestial; byblœmens, feathered, Bienfait; and flamed, Lord Denman. Third, Mr. Alderman Woolley, with bizarres, feathered, Sir Sidney Smith; flamed, Sir J. Paxton; roses, feathered, Heroine; flamed, Triomphe Royale; byblœmens, feathered, seedling, and flamed, Chancellor. Fourth, Mr. A. Moorhouse. Fifth, S. Barlow, Esq., having feathered bizarre, General Grant, with its striking deep red markings.

Then came another class for six Tulips dissimilar, the competition confined to half-guinea subscribers, and four stands were set up. First, Mr. Isaac Hesford, with bizarre Sir J. Paxton, one feathered and one flamed; roses, feathered Industry, flamed Mabel; byblœmens, feathered Mrs. Pickerill, and Talisman. Second, Mr. E. H. Schofield, Royton, with bizarres, feathered, Masterpiece and flamed Sir J. Paxton; roses, feathered Heroine; flamed, Aglaia; byblœmens, feathered Duchess of Sutherland; and flamed George Edwards. Third, Mr. Thomas Simpson. Fourth, Mr. A. Fearnley. There were seven stands of three feathered Tulips, one of each class, Mr. D. Woolley being first with bizarre Typo (Dymock); rose, Alice; and byblœmen, Adonis. Second, Mr. Isaac Hesford, with bizarre, Sulphur; rose, Mrs. Collier; and byblœmen, Sylvester. Third, Mr. E. H. Schofield, with bizarre, Waterloo; rose, Modesty; byblœmen, Mary. Fourth, Mr. J. H. Wood. Fifth, Mr. A. Fearnley. In that for three flamed Tulips Mr. A. Fearnley was first with bizarre, Sir J. Paxton; rose, Mabel; and byblœmen, Maid of Orleans. Second, Mr. W. Kitchen, with bizarre Sir J. Paxton; rose, Mabel; byblœmen, Lord Denman. Third, Mr. J. H. Wood, with bizarre Sir J. Paxton; rose, Alglaia; byblœmen, Lord Denman. Fourth, Mr. E. H. Schofield. Fifth, Mr. Thomas Simpson.

In the maiden growers' class for one feathered and one flamed Tulip there was but one entry, Mr. Thomas Holden, Royton, who had feathered byblœmen, Mrs. Jackson; and flamed rose, unknown. In the class for the same number of flowers, open to all, Mr. Thomas Simpson was first with Sir J. Paxton, feathered and flamed both. Second, Mr. E. Dymock, with bizarre flamed, Sir J. Paxton; and byblœmen feathered, John Hart, one of his own raising. Third, Mr. J. H. Wood, with bizarre-feathered, Masterpiece; and flamed, Dr. Hardy. Fourth, Mr. Samuel Barlow, with bizarre feathered, Commander; and byblœmen flamed, Friar Tuck.

Then followed, as is usual, classes for the best single blooms in each of the three divisions as follows:—Bizarre, feathered.—First, Mr. W. Prescott, with Lord Lilford; second, Mr. A. Fearnley, with Duke of Devonshire; third, Mr. Hugh Housley, with Lord Lilford; fourth, Mr. R. Wolfenden, with Masterpiece; fifth, Mr. E. H. Schofield, with Sir J. Paxton; sixth, Mr. S. Barlow, with General Grant. The other winning flowers following in order of merit with Sir S. Romily, Sulphur, Richard Yates, and Lord Lilford. Flamed.—First, Mr. D. Woolley, and second, Mr. H. Housley, with Sir Joseph Paxton; third, Mr. A. Fearnley, with Dr. Hardy; and fourth, with Duke of Devonshire; fifth, Mr. W. Dymock, with Garibaldi; and Mr. R. Wolfenden sixth and seventh, with Excelsior, Masterpiece, San Josef, and Ajax following in the order of merit. Roses, feathered.—First, Mr. D. Woolley, with Dymock's Lizzie; second, Mr. Thomas Holden, with the same; third. Mr. W. Prescott, with seedling; fourth, Mr. R. Wolfenden, with Heroine, and fifth, with Modesty; sixth, Mr. D. Woolley, with Mr. Lee, Mabel, Andromeda, Nanny Gibson, and Madame H. Arnaud following in order. Flamed.—First, Mr. H. Housley, with Annie McGregor; second, Mr. W. Kitchen, with Madame St. Arnaud; third, Mr. D. Woolley, with Mabel; fourth, Mr. J. H. Wood, with Lady C. Gordon; and sixth, with Annie McGregor—Aglaia, Lady Crewe, and Bertha coming in succession. Byblœmens, feathered.—First, Mr. D. Woolley, with King of the Universe; second, Mr. Thomas Simpson, with Fanny; third, Mr. W. Kitchen, with Violet Amiable; fourth, Mr. D. Woolley, with John Hart; fifth, Mr. H. Housley, with William Bentley, followed by Lady Denman, Coningsby, Adonis, Mrs. Cooper, and Janet. Flamed.—First, Mr. H. Housley, with Adonis; second, Mr. D. Woolley, with Talisman; third, Mr. W. Kitchen, with King of the Universe; fourth, with Chancellor; fifth, with Adonis; sixth, with Duchess of Sutherland; seventh, with Lady Denman; seedlings and Agnes making up the list. The premier feathered Tulip was byblœmen King of the Universe, shown by Mr. D. Woolley; and the premier flamed bizarre, Sir Joseph Paxton, also shown by Mr. Woolley. A first-class certificate of merit was awarded to Dymock's King of the Universe as a fine feathered byblœmen.

Breeder Tulips.—In the class for six dissimilar, two of each division, Mr. S. Barlow was first with some medium-sized flowers of fine quality, having bizarre seedlings; roses, Miss B. Coutts and Mr. Barlow; byblœmens, Glory of Stakehill and George Hardwick. Second, Mr. W. Kitchen, with bizarres seedling and Sir J. Paxton; roses, Mabel and Annie McGregor; byblœmens, seedling. Third, Mr. J. H. Wood, with bizarres Lord Delamere and Sir J. Paxton; roses, Miss B. Coutts and Mabel; byblœmens, Alice Grey and Glory of Stakehill. Fourth, Mr. A. Moorhouse. There were nine stands of three breeders, one of each, Mr. S. Barlow being again first with bizarre Hepworth's 29/6; rose, Miss B. Coutts; byblœmen Glory of Stakehill. Second, Mr. W. Kitchen with bizarre Sir J. Paxton; rose Annie McGregor; byblœmen Adonis. Third, Mr. J. H. Wood, with bizarre Horatio, rose Annie McGregor, and byblœmen Adonis. Fourth, Mr. D. Woolley. Fifth, Mr. E. H. Schofield. Single blooms, bizarres. First, Mr. T. Holden, with seedling. Second, Mr. D. Woolley with Sulphur; and third with Dr. Hardy. Fourth, Mr. S. Barlow with Richard Yates; and sixth with Sir J. Paxton; Mr. W. Kitchen being fifth with William Lea. Roses.—First, Mr. S. Barlow with Mabel. Second, Mr. T. Holden, unknown. Third, Mr. E. H. Schofield, with Annie McGregor. Fourth, Mr. S. Barlow with Miss B. Coutts; and fifth with Annie McGregor. Sixth, Mr. W. Kitchen, with Burlington. Byblœmens.—First, Mr. E. H. Schofield with Mrs. Hardwick. Second, Mr. S. Barlow with seedling 130/63; and third with Talisman. Fourth, Mr. T. Simpson, with Fanny. Fifth, Mr. S. Barlow, with Martin's 117; and sixth, Mr. Thomas Holden, with Alice Grey. The premier breeder was byblœmen Glory of Stakehill, shown by Mr. Isaac Hesford.

THE BATH AND WEST OF ENGLAND SHOW AT NEWPORT, MON.

HORTICULTURAL DEPARTMENT.

THE annual meeting of this old Society began at Newport, Mon., on June 6th, and terminated on June 11th. Unlike the majority of agricultural societies, this one does not ignore horticulture, but encourages it liberally, making it a prominent section. The Hon. and Rev. J. T. Boscawen devotes much time, energy, and good taste to the perfecting of this department. Indeed, this gentleman is the heart and soul of it, and the arrangements are carried out under his personal supervision.

The Society provided a large tent for the exhibits, which were arranged in two masses in the centre, and margined with plants and flowers. The feature of the Show was undoubtedly the Orchids. They were there in hundreds. Mr. James Cypher of Cheltenham brought down many scores of his best and most wonderful specimens, and Messrs. Heath and Son, Cheltenham, had also a superb display, while Mr. Fowler, an amateur grower from Pontypool, had a group that did him infinite credit. The two Cheltenham groups were in the centre, and were beautifully arranged to agree in harmony of colour, the bright flowers being pleasingly relieved by a mingling and fringe of choice Ferns. Mr. Cypher had thirty fine plants of Lælia purpurata, none bearing less than fifteen flowers, and some having as many as thirty blooms. Twenty plants of Cattleya Mendeli were equally well flowered, and thirty of Cattleya Mossiæ represented this variety, the best having from three to four dozen flowers open and in fine condition. Odontoglossums, Masdevallias, Dendrobiums, and other Orchids in great variety were grouped amongst these, and the whole formed a display unequalled at any previous show of the Society. Messrs. Heath's group was uncommonly well arranged, but somewhat lacked the boldness and captivating features of the preceding. Mr. Cypher was awarded the first prize, a silver cup valued £10, and for the best single specimen Orchid he also

secured the first prize of £5 with a fine Lælia purpurata against Messrs. Heath, who competed with a plant of Cattleya Mossiæ, bearing eighty-four blooms. This was a good variety and a magnificent specimen. We did not hear of Mr. Fowler receiving any award, but his group was undoubtedly highly meritorious.

Being so early in the season the Rose classes were not filled so well as was anticipated, but some grand blooms, particularly of Maréchal Niel, were staged. Mr. T. B. Hall of Rockferry gained the £5 prize for eighteen blooms, all Teas, in fine condition. Plants sent in for exhibition made an imposing display. Mr. Pettigrew, gardener to the Marquis of Bute, Cardiff Castle, exhibited some finely grown Palms, Crotons, and other plants, and so did Mr. Roderick, gardener to Lord Tredegar, Tredegar Park, Newport; Mr. Watson, Newport; Mr. Taggart, Mr. Derham, and Mr. Parker, all of Bristol. Messrs. John Laing and Sons, Forest Hill Nurseries, London, had a splendid group of Tuberous Begonias in pots and cut blooms of the same. They were unnamed seedlings, huge blooms, single and double, of exquisite colour. Messrs. Richard Smith & Co., Worcester, had a wonderfully fine collection of Clematises in pots. These were neatly trained, and bearing many grand flowers. The best were Sensation, Countess of Lovelace, Gloire de St. Julien, Lord Melville, Mrs. George Jackson, and Excelsior. Mr. F. Hooper of Bath exhibited numerous stands of Pansies; Mr. Grindrod, Whitfield, Herefordshire, exhibited six bunches of Grapes, three being Black Hamburgh in fine condition, and three Muscat of Alexandria rather green. Amongst numerous stands in the field that of Messrs. Edward Webb & Sons, Wordsley, Stourbridge, was most conspicuous. It was the finest stand connected with horticulture in the Show, and contained large quantities of seeds and garden and field produce. The seeds were shown in endless variety; samples of Potatoes, new and old; samples of lawns, dense and green; and the new Turnips, Carrots, Radishes, Cabbage, Cucumbers, Tomatoes, Rhubarb, and other vegetables were capital samples. Messrs. J. C. Wheeler & Sons, Gloucester, had a stand on a much smaller scale. Messrs. Richardson & Co., Darlington, exhibited different kinds of glass houses, frames, boilers, &c., and Messrs. Foster & Pearson, Beeston, Notts, had greenhouses, boilers, frames, &c., showing the advantages of their well-known and valuable inventions. Messrs. Wright & Holmes, Birmingham, were also exhibitors in the same line, and Mr. C. G. Warne, Weston-super-Mare, and the Newport Pottery Company displayed a fine assortment of vases, pots, &c. Rustic seats and arbours were very attractive from Mr. Henry Inman, Stretford, Manchester, and the garden furniture generally appeared to be highly interesting to the numerous visitors.

SNOW IN JUNE.

Dwellers in the upland regions of Inverness and Moray shires had on Saturday and Sunday an experience such as has, fortunately, seldom been vouchsafed in midsummer to the inhabitants of any portion of the British Isles. In the districts lying immediately north of the Grampian range of mountains, extending a distance of about fifty miles from Blair Athole to Grantown, a snowstorm raged for many hours, dense, fierce, and all-pervading as if the season had been midwinter instead of June. Snow began to fall in the Valley of Badenoch about four o'clock on Saturday afternoon, and for the next five hours the gale raged without intermission or abatement. About nine o'clock there was a temporary lull, and at that hour the landscape, from the distant peaks of the Cairngorms to the most sheltered hollow on Sir George Macpherson Grant's Home Farm of Invereshie, was discovered to present an aspect such as has rarely, if ever, been witnessed in this country during the height of summer. The face of Nature was one vast expanse of dreary white, almost as unbroken as at any period of the prolonged winter from which it was thought the country had at length emerged. It was calculated that in the lowest part of the Badenoch valley at least two solid inches of snow fell during Saturday afternoon, and more than that quantity actually lay on the ground at Sir Charles Mordaunt's shooting lodge, situated in a gully of the Grampians at the top of Glenfeshie. Of course most of the snow melted as it fell, but from six to eight o'clock there was everywhere on the low grounds a decided covering, the depths in most places being so great that boisterous youths, and even vigorous veterans, were enabled to engage in energetic encounters with snowballs! This formed an incident of the midsummer weather of 1888 that will remain long treasured in the memory of the inhabitants of Badenoch. There is reason to fear that the storm will have a most injurious effect on the grouse nesting season. Many eggs are already deposited, but the hens do not yet lie closely, and a proportion of damage can hardly be avoided, but the extent cannot as yet be determined. Snow fell heavily in Ballater throughout Saturday afternoon, and yesterday morning there was not less than half a foot on the surrounding hills, and it lay to the depth of 2 inches in the village and over this part of the country throughout Sunday. Such a storm in June is not remembered by the oldest inhabitant here. Snow fell on Ben Nevis on Saturday afternoon and rain yesterday, though the temperature was below the freezing point.

A correspondent, writing from Corgarff, Strathdon, on the 4th, says:—"This is the third day of a snowstorm in the month of June, to which no living person in this country has ever seen any comparison. Up to Saturday the weather was for some days very cold and frosty. Upon Saturday the atmosphere assumed a very ugly tin-like colour, and about midday hail and snow began to fall, continuing up to the present date. The snow upon the highest range of hills cannot be under 2½ feet deep. Down in the low grounds the depth is not under 9 or 10 inches. The woods and shrubs wear a very weird and sad-like appearance, and in many cases great destruction has been done to all sorts of bushes and trees from the densely packed quantity of snow falling upon the branches. The condition of the animal world may be better imagined than described. The cattle were, as a rule, all newly out upon the grass, and had a night of cold starvation upon the Saturday. Yesterday bundles of hay and straw were dispatched to the fields, but as the storm was still increasing towards evening, all the cattle had to be removed and housed up. Some were driven into sheltered woods where indoor accommodation could not be had. Shepherds who were out all day upon Sunday looking after the sheep in the glens had their beards literally covered with tangles of ice. The state of the flocks is deplorable. In many cases the loss must be serious among the lambs, where for the last three days the hill sheep have been isolated in sheltered corners to keep them from being smothered; but as yet no information has come to hand whether or not any are sealed up under the large snowdrifts, where in many cases the men on the look-out yesterday after the sheep were going through up to the shoulders. As to the feathered tribe, their condition is truly pitiable. Blackbirds lay dead in our garden; and a robin redbreast has come to our doors with his young family, flying hither and thither, picking up fragments, and giving them to the little ones. The curlew, plover, swallow, and all the other migratory birds are gone away again (the lapwing excepted). The young broods of grouse were in some cases seen coming up above the snow new fledged, and the shepherds put one or two broods under Juniper bushes to give them shelter. The landscape, as far as the eye can see, is one of pure white—not one black spot to be seen."—(*Weekly Scotsman, June 9th.*)

A SERVICEABLE HOUSEHOLD REQUISITE.

Knives have to be cleaned in every household, but in the vast majority of houses rotary machines cannot be used. Mr. Thomas Chadborn, the London Manager of the Chadborn & Coldwell Manufacturing Company, and proprietors of the excelsior lawn mowers and drills, is introducing a knife cleaner entirely new in character. It is adapted to the means and requirements of the majority of readers, hence we do not hesitate to direct attention to it. It is intended to supersede the dusty old knife board, and does its work quickly and well. It is something like a double razor strop, to which a rest in the form of a vice is held on the table with one hand for holding the knife, while the cleaner is worked to and fro with the other for polishing the blade. The powder is contained in a small box on the top, and falls as required by the movement of the cleaner. The contrivance is as useful as it is ingeniously constructed, and is worked with ease, due to the springs at each end. It is called the Crown Knife Cleaner, and is represented in the engraving.

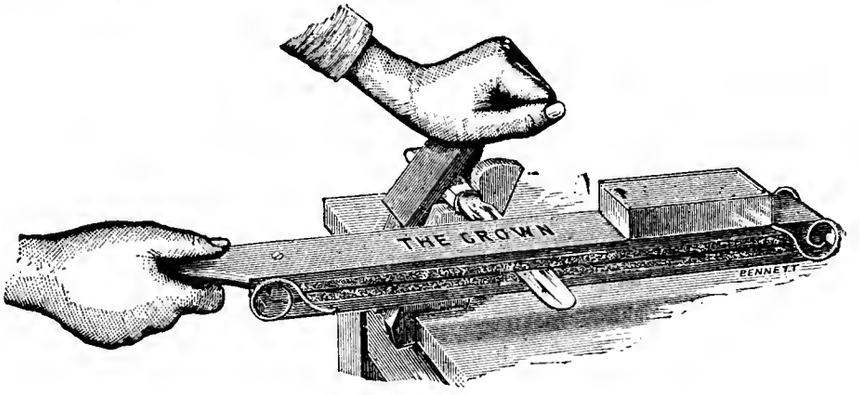


Fig. 66.

BELGIAN WORK AND WAYS.

AN AMATEUR'S GARDEN.

"What is an amateur?" is a question that has been asked scores of times in print and answered in various ways, as it must be, because the term has different significations in different localities in connection with exhibitions of garden produce in England. At many local shows classes are provided for nurserymen, gardeners, and amateurs. In such cases a reasonable interpretation of the term amateur is a person who does not employ a skilled gardener. He may have a man in occasionally to dig and do such like heavy work, but everything he shows should represent his own skill, and not that of someone else in the background. In shows of a national character in which high-class culture is represented, such as those under the auspices of the Royal Horticultural and Royal Botanic Societies, only two sections of exhibitors are recognised—

namely, one representing commerce, and denominated nurserymen; the other, not representing trade, being amateurs, no matter how much skilled labour they may employ in growing the produce exhibited. So it is in Belgium. All cultivators who are not nurserymen (horticulteurs) are amateurs.

M. Jean Everaerts of Antwerp is quite in the front rank of Belgian amateurs, and to him I am indebted for one of the most pleasantly spent days in my gardening career; and to his daughter for an act of kindness I cannot forget—a drive round the capacious docks at Antwerp, an inspection of the famous cathedral, including the magnificent paintings of Rubens and an examination of the treasures in the Plantin Museum, in which all that pertains to ancient printing and engraving is represented. And marvellous some of the work is, and most interesting, while one of the outside walls is covered with a Vine said to be 300 years old. This was a memorable afternoon—one of the "ways" the Everaerts family have of making their guests happy, while they are made equally at home in the spacious town house in the Rue d'Aremberg. There we can see how flowers are cherished, both by their tasteful arrangement in the rooms as well as in the pretty conservatory, this replenished weekly from the garden we are now going to see. This is in the country, or beyond the stupendous fortifications through which we drive on a characteristic April day of sunshine and showers.

Vieux-Dieu is the name of the village near which M. Everaert's mansion is situated, with pleasure grounds surrounding it of about 30 acres. Here we find a piece of Belgian "work," which, regarded in all its aspects, has no equal in the kingdom, and there can be few parallels to it anywhere. The work in question is the rockery. Though not equal in extent to some of the largest in England, it differs from all I have seen, and represents a mountain of labour; and when it is remembered that the stones had to be brought from long distances, or several miles, and that every one was placed its position by the hands of the owner, and every alpine planted by him also, a feeling of astonishment cannot be suppressed that so much could be done by one man during the leisure hours of a busy life in town from 9 A.M. till 5 P.M. Hundreds of tons of material must have been requisite for completing the work that is now covered with plants in colonies, and which display their characters and charms as well as we could expect to see them in their native haunts—the Alps of Switzerland, whence so many of the alpines were collected by M. and Madame Everaerts. The summit of this remarkable rockery mound is crowned by a Swiss chalet-like summer-house, with an ice well beneath, that is filled from the adjoining lake. The top of the mound, which appears to be about 30 feet high, is reached by twisting walks, like chasms in the rocks, and rough stone steps here and there to make the ascent more easy. The slopes are entirely irregular—in some places nearly perpendicular, in others more resembling landslips, and these as if arrested in their downward course by rocks. Thus are formed plateaus for plants. Mounds, nooks, dells, and precipices are formed, all apparently reproductions from Nature, and all occupied with plants, mountain shrubs, and Conifers appropriate to their positions. The rockery mounds creep down in broken ridges and valleys between to the lawn and the water, the length of the outjuttings being upwards of a hundred yards.

As has been previously mentioned in the Journal, it would be impossible to enumerate in these notes the whole, or even the most beautiful, of the plants which occupy the rockery, and a few observations upon the principal features must suffice. The great display is made in the spring, April being one of the gayest months, for at that time a large number of early-flowering plants are at their best. Aubrietias, principally A. græca, occupy much space; the rich blue Lithospermum prostratum scrambles about over the stones in all directions. Saxifraga oppositifolia and others flower abundantly early in the year. Silene acaulis and S. alpestris furnish some lovely tints of pink, while Veronicas rupestris and saxatile supply blue tints. Primulas of many species and varieties, the delicate little Soldanellas with their charming fringed flowers, Linaria alpina, and Daphne cneorum are all conspicuous for their numbers. The humble namesake of a great botanist, Linnæa borealis, is thoroughly at home, creeping in all directions over the stones; while that difficult plant, the Edelweiss, could not be better in its native home. A few Rhododendrons are employed, and amongst these are extensive patches of Saponarias, which also hang over the larger rocks, clothing them most gracefully. Omphalodes and Forget-me-nots are abundant and strong, but one of the most telling features is Erinus alpinus, which is thoroughly established, seeding freely and flourishing in all parts of the rockery. A pretty dwarf shrub which succeeds well in the rockery is Rhododendron hirsutum or the Mountain Rose, as it is sometimes termed. With R. ferrugineum, album, and a few dwarf Himalayan species it grows and flowers profusely. Andromedas, Pernettyas, and Ericas are employed in the most exposed positions, while in the shady parts Gaultheria procumbens luxuriates. Cypripediums, such as C. Calceolus and C. spectabile, appear to be equally happy, but the latter is seldom seen in such fine condition, for some plants have borne between fifty and sixty richly coloured flowers. Lilium auratum thrives and gains strength yearly, all the protection that is given being an old door placed over the bulbs to throw off the rain, which does them more injury than the frost. Bulbs are planted freely, and yield their flowers in profusion, as also do the Hellebores, of which there is a good collection. Sedums and Sempervivums serve to clothe many of the rocks, and in the lower portions a collection of bog plants, such as the Buck Bean, Pontederias, &c., Water Lilies having a place at the margin of the lake. Such is a brief list of some of the plants which M. Everaerts has been successful with, and that have rendered his rockery so famous.

The entire work is a monument representative of persevering industry, good taste, founded on a close observance of Nature, and a deep love of plants, without which no such achievement were possible. Twenty years of thought, of recreative travel, and of labour, in odd moments have been devoted to the completion of this rockery, which affords, as it ought, so much pleasure to its fabricator and delight to his friends.

The entire gardens and pleasure grounds have been made by the proprietor, and the mansion enlarged and beautified. The country is flat, but the spacious lawn is not, and much labour must have been employed in producing the bold undulations, also in the formation of lakes, while planting both for shelter and ornament has been extensive. As a rule, no such care is taken in keeping lawns smooth in Belgium as in England. They are cut now and then with the scythe, but not regularly machined. M. Everaerts adopts our custom of keeping his lawn smooth, and the planting is not done in the straight line or formal style that is observable on the continent. Trees and shrubs are disposed in natural groups, and the home surroundings have a decidedly English appearance. The soil is sandy, and Conifers thrive well. Abies Hookeriana is 10 feet or 12 feet high, a handsome and most elegant specimen. This species of Hemlock Fir is very distinct, and its decorative value is recognised by M. Charles Van Geert, who has propagated it extensively. Retinosporas are very fine at Vieux-Dieu, as also is Abies Nordmanniana, Cryptomerias, and many others. The free and healthy growth of the trees and shrubs in such light soil, that must be very hot and dry in the summer, may be in a large degree attributable to letting the soil alone and allowing the leaves that fall from the trees to remain and decay. Bulbs and other hardy flowers are being established in the borders, and the leafy covering is as beneficial to them as to the trees, and the borders have a natural appearance that is preferred to extreme trimness and unsatisfactory growth.

Of hardy herbaceous plants there is a very large collection. They are grown in borders skirting the walks as they curve through the lawn, and add materially to the interest of a promenade, for something is to be seen to admire at every step, while flowers in their season can be cut in profusion. The soil is thickly mulched with manure on the approach of winter, the covering being left to decay, hence the excellent condition of the plants. These borders are very extensive and form a prominent feature of this cherished garden. A rosery adjoins the kitchen garden, and a large assortment of the best varieties are grown in the enclosure.

A better representative collection of fruit and vegetables are seen than is usual to find in Belgian gardens, and it is evident their culture is understood. Grapes are grown on the English method under glass, and very promising the Vines looked; but as a rule glass structures in Belgium are occupied by plants alone. Peaches are also grown in a suitable range, and Strawberries extensively forced. Larger pots are employed for them than is customary with us, but the lighter soil may perhaps render that necessary. Various kinds of decorative flowering plants, Ferns, Palms, &c., are required and produced in a manner creditable to the cultivator, and every inch of space appeared to be occupied. The gardener was able to converse in English, and the teachings of the Journal, which he reads, were in many points reflected in his practice. A handsome house has been erected for him, and the many workmen in the gardens and on the estate are considered in sickness, and have pensions for good servitude when their strength fails. This places them at an advantage with labourers in England as a rule, though the same system obtains in a few good families. The wages are about 2½ francs a day in winter and 3 francs in summer, equivalent to 12s. and 15s. a week; but land allotments are provided in addition, and they appear to be well cultivated, and are doubtless of substantial benefit to the holders. M. Everaerts and his family must enjoy their garden greatly, and another luxury they evidently enjoy is doing good and making those happy around them. Their ways are ways of pleasantness. They have learned the great truth that it costs nothing to be kind, and we never heard their names mentioned otherwise than in sentiments of true respect, indicative of the esteem in which they are held in the city where they are best known, and in which they occupy such a prominent position.—A JUROR.



KITCHEN GARDEN.

SALTING AND STAKING ASPARAGUS.—Asparagus is such a favourite vegetable that no labour is considered too great which will increase it in size and quantity, and although the shoots are not often staked and tied it is a great advantage to do so. The stronger the roots the higher the growths, and the more apt are they to be blown over. If we look at the beds after a storm of wind it will be seen that some of the finest of the shoots are lying on their side. They nearly snap half way up, but give way from the connection with the root, and it is here the most damage is done, as in breaking off the crown of the root is liable to be damaged, as well as the growths near. It is therefore highly beneficial to stake and tie the strongest of the shoots before any of them are blown

over, and this operation should have attention at once. Place a good strong stake to the large plants and tie them firmly in two or more places. Salt is a good manure for Asparagus. It may be applied at any time, but the present has its advantages, as growth is active, and any stimulant will be at once beneficial. We do not apply it by weight or measure, but a small handful is sprinkled around each plant, and the first rain washes it down to the roots. Three or four applications may be given during the next month if it rains to wash it down, and under the latter favourable conditions we sometimes apply it twice a week.

SUPERFLUOUS FLOWERS.—These are appearing on Rhubarb, Seakale, and Sorrel. We often allow Seakale to bloom longer than is good for it that our bees may profit by the flowers, but we never allow it to seed, and as a rule the flowers should be cut as soon as they form. Rhubarb flowers are useless, and should all be cut off. Sorrel flowers are injurious, as they prevent the leaves forming, and they should all be cut away. We wonder if many of our readers have tried Sorrel as a vegetable and cooked it like Spinach. It is peculiar in flavour, but a good change. The Sorrel we grow is not the small-leaved variety, but one with foliage as large as a sheet of note paper.

OPEN AIR TOMATOES.—If these have to be a success they must be taken in hand promptly, and if well attended to the results will be highly satisfactory. Planting should be finished at once. Do not on any account transfer plants from a strong heat to the open ground. They would not recover for many a day, if they ever did, and it would be very disheartening for beginners, but plants that have been accustomed to the open air for a while will not take any harm. In favourable parts of the country they may be planted in the open quarters at a distance of a yard apart and staked like Raspberries, but in less favourable localities they should have the protection of a wall. Do not make the ground rich for them. Have the soil firm round the roots, secure them at once to prevent their blowing about, and from the first confine them to one or two stems. When allowed to make much wood and ramble about before beginning to train them it is impossible to get them to assume the neat forms they should possess. Should cold weather immediately follow their turning out hang an old net over them, and plant them so as to be as much exposed to the sun and as little to the wind as possible. This applies forcibly to plants away from walls.

PARSLEY.—Plants of 1887 are all flowering, and although the stems may be cut off they will not be of much further use. Never trust to Parsley plants for a supply for more than a year, and as soon as the seed sown this year has produced plants sufficiently large to give a supply pull the old ones up and throw them away. When the seedling Parsley plants are about 3 inches high draw many of them up and transplant them elsewhere. We have planted thousands lately. They are dibbled into good ground in rows 1 foot apart and 6 inches from plant to plant. Sprinkle soot on them when it is raining.

MAIN CROP TURNIPS.—The Turnips from seed sown before this will soon flower and be over, but those from seed sown now will not do this so rapidly, and if a good breadth is sown they will form large roots and remain good for a long time in the autumn. They need not be sown in small quantities now but in a large plot. Veitch's Red Globe is a good sort for present sowing, and they may be put in any vacant piece of ground. We only secured a few roots from our first sowings of Turnips, then they were flowered and were at once cleared off to give place to other crops, but the Snowballs which are now ready are most useful.

SPINACH.—Our supply until lately was secured from the sowing of last autumn, but this began to seed and is cleared off to make room for Turnips. The spring sowings are now ready, but they too will soon bloom, and frequent sowings must be made to keep up a constant supply. It is no use in sowing in large quantities yet, as the heat of July will make it ready so fast that a large sowing would not be all used. A few rows sown once a fortnight will be ample. Thin young plants well, as it is only by this means that large succulent leaves can be obtained.

FRUIT FORCING.

MELONS.—*Setting in Frames.*—Difficulty is sometimes experienced in getting the flowers to set and fruit to swell freely. It usually arises from the plants growing too freely, the atmosphere being too moist, and the plants too crowded with foliage, accompanied by cold. Anything like crowding the foliage or shoots is fatal to a good set, therefore the shoots should be kept rather thin by removing every alternate lateral whilst quite small, for to remove them when large very often induces canker or gumming. The laterals retained will for the most part show fruit; if not, stop them at the second joint, and the sub-laterals will show fruit freely, when water should be given sparingly; but, if necessary, pour it between the shoots so as not to wet the surface of the bed to any great extent. Place hot dung against the sides of the frame, or grass mowings will do with a little litter over the grass. This will raise a gentle heat, admitting of a little ventilation being left on constantly day and night, which prevents the deposition of moisture on the blossoms, which is fatal to fructification. Fertilise the flowers when fully expanded. Admit air freely if fine weather permit, increasing the ventilation at 70°, allowing it to rise to 80° or 85°, or 90°, at which keep it through the day, closing at 80°, except the small portion before alluded to. When the fruit is set, two to four on a plant, and the size of a bantam's egg, commence watering by sprinkling the foliage at closing time, always keeping the water from the neck or collar of the plants; and besides the sprinkling give a good watering twice a week in hot weather, once a week will be ample in dull weather. Commence ventilating at 75°, allow the heat to rise to 85° or 90, close by or before the temperature recedes to 80°, or between 4 and 5 P.M., with a gentle damping. The temperature will run up 10° or more, which will be advantageous to the swelling of the fruit. When the fruit is advanced for ripening keep the bed well lined with hot dung or grass mowings, and admit air freely, omitting the sprinklings, watering if necessary through the spout of the pot instead of through a rose. Cut the fruit a day or two after it commences giving off its aroma, placing it in a dry room, and in two or three days it will be in perfection, which is when the ripening colour pervades every part of the fruit, after which flavour is lost rapidly, and in a few days is entirely gone.

Second Crops in Frames.—Cut back Melons which have fruited, remove a little of the surface soil, and give fresh, also a good watering. If due regard has been had to keeping the soil moist for the first crop, and shoots retained from near the base of the fruited Vines, fresh growth will be quickly made, and fruit will speedily set and swell; indeed, we have had fruits set and swelling freely before the first fruits are cut, having encouraged fresh growth from near the collar of the plants. Some cultivators keep their plants so dry at the roots during the growth and ripening of the first crop as to completely exhaust them, and in many instances spoil the fruit, it ripening prematurely, and consequently is not solid and the flavour is poor. Plenty of moisture is necessary when the fruit is swelling, and enough should be given when ripening to preserve the foliage, there being no comparison of fruit ripened with foliage and that which has no foliage to aid it during the ripening process.

Late Crops.—Some consider Melons are worth little after the hot days of summer, but they are often good when the days are bright in September and October. Plants that were raised some time ago and have been put out, or should be at once, will set freely in the dog days and afford acceptable fruit in August and September. A last sowing should be made for growing in dung-heated pits and frames. It is advisable to make up the beds at once, or at the same time as the seed is sown, which should be in 4-inch pots about half filled with soil, placed in a frame or house. One or two seeds may be placed in each pot and supply soil around the stem as the plants advance, but not higher than half an inch from the seed leaves. When the bed is ready turn the plants out of the pots, place one in the centre of each light, planting to within half an inch of the seed leaves with the soil inclining from the stem, give a good watering, and shade from bright sun. Pinch out the point of the leader at the second rough leaf, which will induce side shoots, reduce those to four, take two to the front and two to the back of the frame or pit, rubbing off the laterals to within 9 inches of the stem all around, and every other lateral upon the primary shoots, stopping those at 6 inches from the sides of the frame. The plants will be showing and setting fruit in plenty early in August, and they will ripen in late September. All the stopping and disbudding must be done whilst the growths are small, for large reductions of growth only tend to promote grossness in the parts retained, and are unfavourable to the setting of the crop.

The grower who has well-heated light houses will have no difficulty in maintaining a supply of fairly flavoured fruit through October or November from sowing up to the third or fourth week in July.

CUCUMBERS.—Strawberry houses, houses occupied with Vines in pots, and structures employed for wintering bedding plants will be cleared, and may be utilised for growing a late supply of Cucumbers. Grow the plants in pots 12 inches in diameter, or larger, draining them well, and only partly filling them with compost so as to leave space for fresh additions, or they may be grown in boxes of about 15 inches depth, and 18 inches to 2 feet square. A wood or other trellis may be improvised at 15 inches from the glass. No fire heat will be necessary, the house being closed between 3 and 4 P.M., syringing then, the floors and every available surface being kept damp so as to secure a good moisture through the day, but do not syringe in the morning, it often being the cause of great mischief to the foliage. Admit air at 75°, and allow the temperature to rise to 85° or 90° with sun, and close between 80° and 85°, and if the temperature rise afterwards to 90° or 95° all the better. Train with a single stem to the trellis, rubbing off all laterals to that height, then allow them to grow, pinch the leader after it has advanced about two-thirds across the trellis. The laterals may be stopped one or two joints beyond the show of fruit.

In the Cucumber house fire heat will only be necessary to prevent the temperature falling below 65° at night, and to ensure 70° to 75° by day artificially. Attend well to stopping the shoots, removing bad leaves, well thinning the old growths, and watering with weak liquid manure about twice a week. To encourage surface roots sprinkle the bed with a few fresh horse knobs once or twice a week, and occasionally with a little soot, both of which will be beneficial from supplying ammonia to the atmosphere.

Pit and frame Cucumbers may be watered about 4 P.M., closing then or earlier according to the weather; but it is not safe to close so early as to raise the temperature above 90° to 95°. Liquid manure should be given occasionally, but it is not desirable to apply it over the foliage, nor too frequently. Keep the growths fairly thin, thinning out old growths and encouraging others in their place so as to keep up a succession of bearing wood. Stop one or two joints beyond the fruit. Avoid overcropping and allowing the fruit to remain on the plants a day longer than can be helped.

VINES.—*Late Grapes.*—These must be thinned immediately they are large enough, the berries swelling so rapidly at this season that they

soon become too large to be thinned properly and expeditiously; besides, when the work is too long deferred the size of the fruit is impaired. The laterals must not be allowed to extend so as to interfere with the principal foliage. The growth may be allowed to extend where there is space to admit of its full exposure to light, but not otherwise, overcrowding and overcropping being the cause of more failures than any other error of culture. Remove all superfluous, badly placed, deformed, or small bunches. Crop lightly, which means size, quality, and high finish, bulk meaning small fruit, bad colour, poor quality, non-keeping, and often shanking. Water thoroughly when necessary, one good soaking is worth many driblets.

Vines Cleared of their Crops.—Syringe occasionally to keep the foliage clean, afford water to render the soil moist, a good mulching keeping the surface from cracking, and the surface moist will prevent the roots going down in quest of moisture. Allow a moderate extension of the laterals, and admit air freely above 60°. There is no fear of the wood not ripening, and the difficulty is to prevent the premature ripening and fall of the foliage.

Ripe Grapes will be the better for slight shade from powerful sun, some pilchard or a double thickness of herring nets drawn over the roof lights will mostly be sufficient shade, and a good spread of foliage will assist in Hamburghs keeping colour. Moderate air moisture will not injure the Grapes if accompanied by free ventilation. Keep laterals fairly under, but a little extension will assist in the retention of the principal leaves, and upon their continuance in health depends the maturity of the buds for next year's crop.

Grapes ripening should have a circulation of air constantly, with sufficient heat in the pipes to maintain a night temperature of 65° and 70° to 75° by day, with 80° to 85° or 90° through the day from sun heat. Avoid a very acrid atmosphere, damping occasionally, and do not allow the border to become dry. It is a confined stagnant atmosphere that does all the mischief in Grapes cracking.

Muscats and Lady Downe's completing the stoning process should have air abundantly, sufficient warmth being kept in the hot-water pipes to maintain a night temperature of 65° to 70°, and 5° to 10° more artificially in the daytime, as if they are kept cold and close they are, if the weather prove bright, liable to scald.

Stop Vines in pots when from 6 to 8 feet long, and pinch the laterals and sub-laterals at one joint as produced. This applies to Vines intended for fruiting next season; those intended for planting may be allowed to make all the lateral growth they can, and be cut back to two or three eyes at planting time. Get as much stored up matter into the fruiters as possible by judicious feeding, and cleanly foliage thoroughly exposed to the light.

PINES.—*Fruit Ripening.*—When the fruit commences colouring syringing must cease, but the supply of water at the roots must be continued as before when necessary, and to improve the colour and quality of the fruit ventilate liberally, but do not allow the temperature to fall below 80° in the daytime, gradually diminishing the moisture in the house, maintaining a night temperature of 70° to 75°. Plants of Queens and Providence started into fruit last February will ripen this month, whilst Smooth Cayennes and Charlotte Rothschild will require about a month longer to finish properly. Under the same conditions they furnish a good successional supply, which may be still farther extended by removing some of the fruiting plants to a cool airy place. Keep the heat at the roots from 80° to 90°.

Successional Plants.—Fire heat will not be necessary much longer, as the temperature, by the assistance obtained from the heated beds in which the plants are plunged, rarely allows the atmospheric temperature to fall below 65° at this season and for the next few weeks, and this temperature is more suitable for the satisfactory development of the plants than a higher one. Recently potted plants make growth quickly. Strict attention should be given to ventilation to prevent an attenuated growth, therefore admit air at 75° to 80, increasing it until 85° is reached, and above that ventilate fully, diminishing in the afternoon closing the house at a temperature of 80°, affording a light sprinkling daily when bright weather prevails.

Suckers.—From those on the early fruiting plants a sufficient number should be selected to meet the demand, and if started at once the plants resulting will be suitable for fruiting from this time onwards another season, and will be supplementary to those started in March, their requirements being identical, only shading must be more effectual.

PLANT HOUSES.

Gesneras.—These should be grown on from the start to the flowering stage without a check, and it is very difficult to retard them without injury, which often results in their failing to flower satisfactorily. The best and safest method when required for late flowering is to delay starting them into growth; the tubers keep safely for a very long time in dry soil or sand. The latest tubers are still plump, but will be started in gentle heat in boxes or pans filled with light material, composed chiefly of leaf mould and sand. They root freely, and can when large enough be transplanted singly into pots without the slightest check. We prefer this method to starting them singly in small pots, unless they can be plunged where the soil can be kept in a uniform condition for moisture. The earliest will be showing signs of active growth, and should at once be lifted out of pans or boxes and placed into 3-inch pots liberally drained. Employ a compost of loam and leaf mould in equal proportions, with coarse sand freely added. Water after potting, and stand the pots in a warm house on a moisture-holding base, where the strong rays of the sun can be shaded from them. Be careful not to syringe or allow water to lodge upon their foliage. They delight in heat and moisture, but cannot endure syringing.

Tydæas.—Plants for early flowering will be sturdy specimens in 3 and 4 inch pots, or larger, where many tubers have been started together. These may be placed in 6 to 8-inch pots or pans according to the size of plants required. For decorative purposes 5 and 6-inch pots are the most suitable; in fact, when larger than these are required pans are better than pots, because these plants are not deep rooting and do not care for too much soil about their roots. Those ready for lifting out of boxes or pans to be potted for the first time will be found the most serviceable in many places, for they will be in full beauty at a time when flowering plants in the stove are rather scarce. At first they can be placed in the same compost as Gesneras, and when finally potted the soil may consist of good fibry loam, one-third leaf mould, one-seventh manure and a liberal quantity of coarse sand. These, like Gesneras, must not be syringed. Amongst the most useful of Tydæas are some of the evergreen varieties that make no underground stems or tubers, such as Madame Heine which must be perpetuated by cuttings. These flower naturally at a time when Poinsettias, Euphorbias, and Plumbagos are past. Cuttings rooted thickly together in pans as advised will now have strong luxuriant growths that may be taken off and rooted singly in 2-inch pots. They will root freely in any light sandy soil if kept close in the propagating frame and shaded from the sun. As soon as they are well rooted the points of the plants may be removed, which will induce them to branch freely. If larger plants are needed, those in the pans from which the cuttings have been taken may be allowed to break into growth, when they can be lifted out of the pans and placed singly in 5-inch pots.

Gloxinias.—Do not neglect the earliest plants as they cease flowering, but place them in frames where water can be applied as they need it until they ripen the whole of their foliage. It is a mistake to keep successional Gloxinias too warm; at this season of the year they will do well without the aid of artificial heat. All that is needed is a moderately close atmosphere with plenty of moisture and shade from strong sunshine. Place seedlings raised early into 5-inch pots, a capital size to flower them in, while those raised later and pricked into pans and boxes may be placed into 3 or 4-inch pots according to their size.

Achimenes.—More cuttings of these may be inserted in 5-inch pots, and if brought forward gently the plants will be useful for the conservatory as long as that structure is warm enough for them. When the cuttings have been removed, allow the plants that have been reserved for yielding cuttings to make a good growth and flower, or their tubers will be small.

FLOWER GARDEN.

Lawns.—Closely mown velvety green turf is most appreciated, and it is only by frequent attention that this can be attained. If neglected for a few weeks, or allowed to grow long enough to be made into hay, the grass becomes coarse, and many of the finer varieties are either crippled or killed. This season the grass grows rapidly, and unless a heavy machine is used it requires to be mown every four or five days. Light or hand machines will not cut a heavy crop of grass properly, and those owning small mowers ought to use them frequently, or they will soon be unable to work with them. At the outset, or at any time when the grass is too long to be cut by a machine, it ought first to be mown closely with a scythe, and the machine passed over it immediately after. Even where a heavy pony or horse machine is available, these will leave the turf in a much better condition if run over before the crop is heavy. When the grass is left more than a week it takes much longer to cut it, and the work is much heavier. Therefore mow frequently, and there will then be fewer complaints about mowing machines failing to do their work properly.

Newly Planted Trees and Shrubs.—If many of these, especially those transplanted late, do not get heavy supplies of water now, and also during the summer, the chances are failures will be numerous. It is quite a mistake to defer watering till they give signs of suffering from drought, a tree or shrub flagging badly in sunshine rarely recovering properly, no matter how often water is applied. Nor are mere driblets of any avail. A thorough soaking should be given, and it is advisable to water a few every day rather than give a small or useless quantity to a greater number. Those moved with a good ball of soil and roots ought to have the ground near the stems opened out, so as to form a basin to hold all the water poured in. If the old ball is found to be at all dry, this ought to be pierced with pointed iron rod, or otherwise it will be almost impossible to thoroughly remoisten it. Overhead waterings are also most beneficial in hot evenings and dry days. Both new and old shrubberies will be benefited by a mulching of some kind, the grass from the mowing machine being very suitable for the purpose.

THE BEE-KEEPER.

NOTES ON BEES.

UNLESS it was in 1842, no season within the remembrance of man has been so inauspicious as it has been recently in the north. On Friday evening, June 1st, the temperature sank to 40°, and

stood at that until Saturday at 3 P.M., when it sank to 38°, remained there till next day, when it reached 55°, then gradually sank till it reached 32°, varying between that and 50° up to the 6th inst. The thermometer is in rather a sheltered position, 5 feet from the ground, and the cold has been more intense on the surface, as many things are frosted, particularly Potatoes.

Bees have suffered greatly, the surface of the ground, both near and far off the hives, are thickly strewn with dead bees, and brood drawing has commenced at many hives to a greater extent than I ever experienced, and not for want either. Bee-keepers are at their wit's end what to do in the matter, as feeding only brings out the bees to perish in greater numbers. From some quarters the news comes of the bees succumbing altogether. Bee-keeping at the present time is not promising, but we hope for better days. Untoward as it is here, it has been worse further north. In some places there has been much frost, and I observe that in one case the thermometer was as low as 10°, so that everything not quite hardy has been frosted. One correspondent says, "Yesterday, the 3rd, was one of the worst days that has been here for years; blinding sleet and rain; the hills were all white; the snow was lying here for hours after it had settled." It will be necessary to feed the bees.

EMPTY COMBS.

The proper utilisation of empty comb has long been practised in well regulated apiaries throughout Scotland, but the practice for some time with some bee-keepers has either been abused or not understood so as to have satisfactory results, and many of the lessons given on the subject have been the direct cause of failure and disappointment. In order to make clear the best way to utilise empty but white comb, we must take a lesson from Nature. We are often hearing of bees busy making combs when no honey is stored in them, and bee-keepers are assured that these combs are meant to be filled with the pure nectar when that happy time arrives. Some advise feeding with sugar to encourage empty comb-building, the advice being as ungenuine as the honey taken from them would be.

As our bees do not work in that manner, nor on these lines, presumably other bees will act in the same manner and as economically as our own do. It will therefore be well if bee-keepers dismiss from their minds the false impression that bee nature can be altered to suit the capriciousness of individuals. When bees are filling supers (it is the combs of these only I refer to) they do not work and make much empty comb in advance of the flow of honey, but only in a certain proportion to the income, and that proportion scarcely ever exceeds a fourth or a fifth, and very often much less. Whenever the flow of honey ceases comb-building generally ceases after twenty-four hours, and continues only that time if much loose honey is in the body of the hive.

Sometimes supers are all filled and well sealed at the close of the honey season, at others a proportion of the combs are empty. In the former case, although the supers are not removed immediately the honey stops, their purity will remain intact, but not so with empty or half-filled combs, because, as a rule, the moment the honey flow ceases the combs are gradually darkened by the bees. To make these combs available for another occasion they ought to be removed at once, hermetically sealed, and kept free from moths and dust. When such combs are to be used by the bees again they should only be given them as a second super, or only when honey is plentiful at the first, when they will be beautifully finished. The cause of the many disappointments to bee-keepers who get partially filled supers darkened is giving them to the bees at a time honey is not coming in. Supers wrought upon the Stewarton hive have their purity preserved by the bee-keeper regulating the slides according to the weather at the time the supers are on the hive, and the large brood nest with the slides closed over it prevents brood being deposited in the combs of the super. By the way, I may state before a queen will deposit eggs in a super, the bees must first have prepared the cells for their reception. I think the foregoing will make it sufficiently plain how to utilise pure comb and have its purity preserved.

The purer the comb the more delicate the flavour of the honey, and honey extracted from combs that have been bred in is always more or less tainted. The closer covered we keep our supers, even in the hottest of weather, the purer they are. When ventilation is necessary do it from beneath; never uncover supers.

THE CALEDONIAN APIARIAN SOCIETY

Will hold its fifteenth annual Exhibition in Glasgow, in conjunction with the Highland and Agricultural Society, on the 24th, 25th, 26th, and 27th July. The prize schedule is very much as in former years, the largest prizes going to dealers, which, we believe, is contrary to the wishes of its patrons. We are of the opinion that while the money has been honestly distributed it has been imprudently allocated.

The list of patrons, office-bearers, and Committee appears to be in a great measure formal appointments, because in addition to the incapacity of some, others on the list have been dead for years, so that it will be a matter of impossibility to bring even the members of Committee together in this eventful year. The Society has been in a great measure a drag since its inception; never having been carried out on Scottish lines and systems, its members never held well together. We learn a change is to be made, if not altogether broken up. Should the Highland and Agricultural Society take it entirely under their own charge we hope the prizes will be directed towards those who at first were intended should reap the benefit.—A LANARKSHIRE BEE-KEEPER.

"THE BOOK OF BEE-KEEPING."*

THERE is no greater proof of the wide and far reaching popularity of bee-keeping than the large amount of literature on the subject which has been published during the past few years; in fact, the author of the present work seems to think an apology necessary when sending out into the world an addition to the already numerous, and in some respects unsatisfactory, standard works, practical manuals, and hand-books treating of bee-keeping in its various aspects. The object of this last manual is to supply a want, real or imaginary, and to place in the hands of the bee-keeper a book which shall not only be free from technicalities, but shall treat upon apiculture in its most modern aspect, and be so low in price as to insure its sale among the poorer bee-keepers of this country. The original conception was good, and if Mr. Webster had been content to work throughout on the simple lines he lays down on the first page of the work he would have achieved an even greater success; but on perusing the earlier pages we find paragraph after paragraph devoted not altogether to mere technicalities perhaps, but still to minute details and arguments, which, however interesting they may be in the abstract, are of very slight importance to one who simply desires to become a bee-master. Surely if a bee-keeper desires information as to the class of insects to which the bee belongs, and on other points of a somewhat similar nature, he would be led to purchase or borrow a book in which space is properly devoted to such portions of the subject, and most bee-keepers cannot but regard information, which may be most entertaining in itself, as out of place in a work written for the practical instruction of men who, above all other considerations, aim at making the greatest possible return on their outlay.

Again on page 4, by a delicate manipulation of figures, and by an ingenious mingling of facts within the author's own knowledge, the assertion that "no description of stock-keeping is such a financial success as bee-keeping" is bolstered up. Let us for a moment dissect the basis upon which Mr. Webster builds up this structure of "financial superiority of bees above other descriptions of stock kept by working men." He first gives a certain instance in which "he saw a bee-keeper who in one season took 200 sections from one hive; 135 of these he sold at 1s. each, the remaining sixty-five (Heather) at 1s. 6d. each.' And then goes on to say that "Although this is an exceptional case in England, scores and scores of modern bee-keepers take on an average 60 lbs. from a colony. Even at 6d. per pound this will show a fine profit on the outlay—30s. per annum is not to be despised." Then follows a slight digression, but in the next paragraph a few quotations are given of amounts paid to individual keepers ranging from £6 to £29 in one season. Then comes the conclusion, "We think that the foregoing is a positive proof as to the financial superiority of bees above other descriptions of stock kept by the working man." To our mind the case is clearly "not proven," and there appears to be too much casuistry in the argument to recommend it to the common sense of the working man. To say that one man sells a certain quantity of honey at a high price, then to add that a man may expect an average yield of so much,

* By W. B. Webster. London: Upcott Gill, 170, Strand.

and that yield sold at even a low price will bring in so much, and then to add instances of abnormal profits, appears to be an unjustifiable attempt to puff the present possibilities of bee-keeping. Such profits are occasionally made, and no doubt if only those men became bee-keepers who were suited to the care of bees in consonance with the author's views on the subject, expressed on pages 2 and 3, such instances would be less rare; but in the present state of prices, and in view of results in different localities, it is certainly a mistake to give instances of great yields from good honey districts as criteria for the guide of one who wishes to become a bee-keeper if he can see that a fair profit may reasonably be expected from the pursuit.

Another space which might have been more profitably filled is occupied by an argument which centres round the statement that "wood, not straw, is the bee's choice of outside architecture." This is surely a most unnecessary digression; it seems like stating a case to show the advocate's skill in refuting it. After all, these are, perhaps, matters of minor importance, although we could have wished that by expunging excrescences the book could have been compressed into a smaller space and sold at a less price.

As we might expect, the standard frame is recommended for the adoption of the bee-keeper, and due stress is laid upon the necessary observance of the rule to have all hives readily interchangeable in every part; in fact, the portion of the work treating on the practical management is admirably written and suitably illustrated, and we may congratulate the author upon the production of a very succinct and valuable manual. It is not too concise, but in the latter pages especially preserves an admirable mean; even the smallest points are noticed, provided they are of practical importance, and an instance of this is seen on page 26, where we read that when using "enamel cloth quilts next to the frames it is essential that plenty of warm coverings should be placed above them, and the stock very strong, or the condensation of the atmosphere will produce too much dampness." The instructions given in the paragraph devoted to "Quieting and Handling Bees" are well worth reading, but surely there is a mistake in the first few lines, where we read, "Confidence in a great measure is the bee-keeper's safeguard; skill, perhaps, ranks as second in importance." Surely skill begets confidence, at least equally as much as confidence begets skill, and, in our opinion, even in a greater degree; for without skill there can be no confidence, but with skill there is rarely, if ever, a want of confidence. The chapters on "breeding" are lucid and good, but we are most pleased to note the author's observation that the advice to "spread brood in spring time is the worst advice that can be given," and his "desire to see that manipulation banished entirely from the pages of bee manuals." At last, the triumph of common sense seems imminent!

Although the appearance of the volume is somewhat marred by the black type at the head of each paragraph, still, in a popular work, aiming at giving the greatest possible amount of information in the manner in which it can be most easily, not only digested when found, but found without trouble when required, it is not too much to say that appearance should give way to a great extent to usefulness, and there can be no doubt that the encyclopædia style of dividing up each portion of the work into paragraphs limited to the point specially under discussion must, in conjunction with an admirably clear and well-arranged index, do much to popularise a work, which in a certain space contains more information of value to a practical bee-keeper than we have seen in any other publication of a similar size.—FELIX.

TO CORRESPONDENTS

*** All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Gas-heating Apparatus (*G. Shrewsbury*).—The testimonial is a very good one, but we cannot publish it, as we should be inundated with others, for which it would be impossible to find room.

Sale (*E. S.*).—Why not try an advertisement in a local paper? There must be several purchasers in your district. The value depends on size and quality.

Pears Decaying on the Tree (*Ebor*).—It is no unusual thing for Pears that have been attacked by an insect while in the bloom to swell to a certain size and then fall off. Many Apples, and Pears too, drop shortly before arriving at maturity in consequence of an insect which has either burrowed into their side, or its larva being deposited while it wat in bloom, and it advances with the fruit. There is no preventive to this, but there are generally sufficient left unhurt for a crop.

Weevils on Roses (*G. H.*).—The small beetle-like creatures you send are highly destructive to Roses and several other plants. The name of the weevil is Cureulio or Otiorhyncus sulcatus. Catch all you can by examining the trees after dark with the aid of a light, and if the weevils are numerous quickly spread a white sheet on the ground for them to fall on, and they will then be easily seen, and can be taken care of. They may be also caught early in the morning. If not caught they deposit eggs in the ground, from which grubs emerge, and then are as destructive to the roots of plants as the perfect insects are to the leaves.

Ivies for Pot Culture (*W. S. S.*).—The small-leaved varieties, both green and variegated, are usually grown in pots for placing in vases. The plants can be trained to any form required by securing the growths to wire trellises. All the varieties are suitable for the purpose. You do not state the number required, and you may safely leave the selection to a vendor. Plants can be had in different sizes established in pots, but for obvious reasons the larger they are the higher is the price. They grow well in four parts of turfy loam, one each of leaf soil and decayed manure, with a little crushed lime rubbish and bruised charcoal for ensuring porosity. The pots may be plunged in ashes in the open ground, and the growth of the plants will be governed by the attention they receive in watering and cleanliness.

Propagating Lychnis vespertina, fl. pl. (*J. Wilson*).—It is now too late for propagating this fine perennial, unless the plant is an old established one, in which case the requisite cuttings may be present. In small plants they will not be forthcoming, as the flower stems are now making rapid progress. If you have convenience for doing so place your plant in slight warmth at the end of February or early in March. As soon as growth appears secure the radical shoots when 3 inches long or thereabouts, taking them off with a little hard wood attached. Insert in sandy soil in pots, and cover with bellglasses, having given a good watering previously, placing them on a cool base for a fortnight in a shady corner of the greenhouse. If at hand a gentle bottom heat will assist them considerably at this stage, but on no account give either cuttings or parent plant excessive heat, as both speedily weaken, and the cuttings then rarely make good plants at all.

Covent Garden Market Measures (*M. M.*).—These, being often made either of osier or deal shavings, vary triflingly in size more than measures made of less flexible materials. *Scakale Punnets.*—8 inches diameter at the top, and 7½ inches at the bottom, and 2 inches deep. *Radish Punnets.*—8 inches diameter and 1 inch deep, if to hold 6 hands; or 9 inches by 1 inch for 12 hands. *Mushroom Punnets.*—7 inches by 1 inch. *Salading Punnets.*—5 inches by 2 inches. *Half Sieve.*—Contains 3½ imperial gallons. It averages 12½ inches in diameter and 6 inches in depth. *Sieve.*—Contains 7 imperial gallons. Diameter 15 inches, depth 8 inches. A sieve of Peas is equal to 1 bushel; a sieve of Currants 20 quarts. *Bushel Sieve.*—10½ imperial gallons. Diameter at top 17¾ inches, at bottom 17 inches; depth 11¼ inches. *Bushel Basket.*—Ought, when heaped, to contain an imperial bushel. Diameter at bottom 10 inches, at top 14½ inches; depth 17 inches. Walnuts, Nuts, Apples, and Potatoes are sold by this measure. A bushel of the last-named cleansed weighs 56 lbs., but 4 lbs. additional are allowed if they are not washed. A junk contains two-thirds of a bushel. *Pottle*—Is a long tapering basket that holds rather over a pint and a half. A pottle of Strawberries should hold half a gallon, but never holds more than 1 quart; a pottle of Mushrooms should weigh one pound. *Hand*—Applies to a bunch of Radishes, which contains from twelve to thirty, or more, according to the season. *Bundle*—Contains six to twenty heads of Broccoli, Celery, &c.; Seakale twelve to eighteen heads; Rhubarb twenty to thirty stems, according to size; and of Asparagus from 100 to 125. *Bunch*—Is applied of herbs, &c., and varies much in size, according to the season. A bunch of Turnips is twenty to twenty-five; of Carrots thirty-six to forty; of Greens as many as can be tied together by the roots. Early in the season when produce is scarce the lesser numbers make up a bunch, later the bunches are larger.

Weevils on Vines (*T. W.*).—Your Vines are attacked by the destructive pest, which is referred to as follows by Mr. Barron in his useful work, "Vines and Vine Culture:"—"The Vine Weevil (Curculio vitis), otherwise Otiorhyncus sulcatus, otherwise Otiorhyncus vastator; and his smaller and less common congener, Otiorhyncus picipes. The former is of a dull black colour, hard, round bodied, granulated, wingless, having six legs, a blunt proboscis, and two antennæ. Its length is about three-eighths of an inch, and its habits are nocturnal. The larvæ are of a dull white colour, legless, curved, and maggoty of appearance, and seem to have a gregarious tendency. The pupa is soft, of a dirty white tone, and more sensitive than pupæ are in general. In the larva state, living wholly underground for a period not yet ascertained, this creature feeds upon the Vine roots, and gnaws them almost to a stump, enjoying especially the out-push of young fibres, and following every tender growth. This is the most destructive stage. Then, after about a fortnight passed *in statu pupillari*, the weevil issues from the soil, and for several weeks perhaps feeds upon the foliage by night, and lurks about the neighbourhood by day. To strong and well-established Vines this pest may do much injury; to newly planted canes and those in pots it is often fatal. There seems to be no remedy—for who can

remove and burn the soil, as is lightly recommended, without destroying the Vine roots too?—except to catch the marauder in his nightly raid, and check the breed. This is done by laying white cloths or papers under the Vine stems, and throwing a bright light on them. Any weevils which do not drop, as some will do at the surprise, may generally be brought down by a sharp shake of the trellis. By frequent care of this throughout the spring and early summer the plague may be stayed, though nothing will entirely quell it when once set up. Above all permit no pot plants, such as Ferns, Spiræas, &c., of tufty and thickety nature to stand near the Vines in springtime. In these the weevils harbour, and pursue their evil courses; and then the female descends the pot and the Vine roots support her issue."

Grubs in Soil (*W. G.*).—We are sorry to inform you that your ground is infested with a pest far more destructive and difficult to extirpate than slugs. The grubs you send are the larvæ of the fly commonly known as the daddy longlegs, one of the crane flies (Tipula oleracea). From the toughness of the skins of the grubs they are called Leather Jackets, and it is doubtful if anything can be supplied strong enough to destroy them without destroying vegetation also. The illustrations

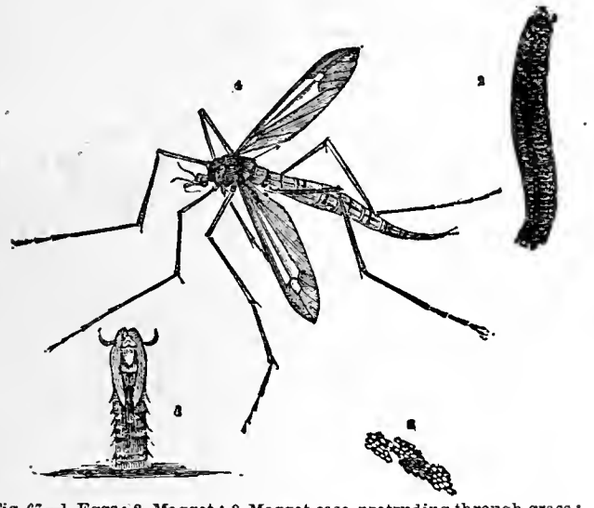


Fig. 67.—1, Eggs; 2, Maggot; 3, Maggot case, protruding through grass; 4, Daddy longlegs (female).

show the grub, fly, pupa case, and eggs. A heavy dressing of gas lime before turning-in the turf might have been beneficial, but cannot be used effectively now. The grubs are usually the most active during the month of June, and generally change into the pupa state in July, but not always. In that state they do no harm. Strong Broccoli plants put out in July, the roots and stems thickly smeared with soot by drawing them through a thick puddle before planting, would be much more likely to escape injury than by planting in May; and a little petroleum, say a wineglassful to a gallon of the soot puddle, would probably improve it as a deterrent of attack by the grubs. Rooks and starlings are said to devour the grubs, and the starlings the flies also, and in some parts of the continent nesting conveniences are provided for aiding the increase of the birds. Superphosphate of lime, at the rate of 6 or 7 cwts. per acre, is good for Cabbages and all similar crops, growth being further accelerated by 1½ cwt. of nitrate of soda. Soot spread round the plants is also beneficial, and is freely used by many growers of vegetables for market.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*Senex*).—1, Libertia ixioides; 2, Saxifraga cristata var. angustifolia; 3, Veronica saxatilis; 4, Arenaria balearica; 5, Valeriana Phu; 6, Cerasus Padus. (*G. M. D.*).—It is a double variety of Cardamine pratensis, and has been observed before; it is, however, very interesting, but not worth sending to the Society you name. (*R. M.*).—1, Cypripedium Godefroyæ; 2, C. barbatum; 3, C. Lawrenceanum; 4, C. niveum. (*Lady King*).—Staphylea pinnata. (*W. S.*).—1, Wistaria sinensis; 2, Phlox setacea; 3, Daphne cneorum; 4, Berberis Darwini; 5, Azalea coccinea; 6, Negundo fraxinifolium. (*Lalcham*).—Magnolia acuminata.

Hive (*R. C.*).—If you had sent your name your letter would have been forwarded, and it can be yet if you make good the somewhat curious omission.

COVENT GARDEN MARKET.—June 13th.

BUSINESS good, with a slight advance on best goods.

FRUIT.

	s.	d.		s.	d.
Apples, ½ sieve	0	0	to 0	0	
Nova Scotia and Canada barrel	10	0		18	0
Cobs, 100 lbs.	45	0		0	0
Grapes, per lb.	2	6		5	0
Lemons, case	10	0		15	0
Oranges, per 100	4	0	to 9	0	
Peaches, dozen	6	0		18	0
Pears, dozen	0	0		0	0
St. Michael Pines, each	3	0		5	0
Strawberries, per lb.	2	0		5	0

VEGETABLES.

	s.	d.		s.	d.
Artichokes, dozen	1	0	to 2	0	
Asparagus, bundle	1	0		4	0
Beans, Kidney, per lb.	0	6		0	9
Beet, Red, dozen	1	0		2	0
Broccoli, bundle	0	0		0	0
Brussels Sprouts, ½ sieve	0	0		0	0
Cabbage, dozen	1	6		0	0
Capsicums, per 100	0	0		0	0
Carrots, bunch	0	4		0	0
Cauliflowers, dozen	3	0		4	0
Celery, bundle	1	6		2	0
Coleworts, doz. bunches	2	0		4	0
Cucumbers, each	0	4		0	7
Endive, dozen	1	0		2	0
Herbs, bunch	0	2		0	0
Leeks, bunch	0	3		0	4
Lettuce, dozen	0	9	to 1	3	
Mushrooms, punnet	0	6		1	0
Mustard and Cress, punt.	0	2		0	0
New Potatoes, per cwt.	10	0		21	0
Onions, bunch	0	3		0	0
Parsley, dozen bunches	2	0		3	0
Parsnips, dozen	1	0		0	0
Potatoes, per cwt.	4	0		5	0
,, Kidney, per cwt.	4	0		0	0
Rhubarb, bundle	0	2		0	0
Salsafy, bundle	1	0		1	6
Scorzonera, bundle	1	6		0	0
Shallots, per lb.	0	3		0	0
Spinach, bushel	1	6		2	0
Tomatoes, per lb.	1	0		1	3
Turnips, bunch	0	4		0	0

PLANTS IN POTS.

	s.	d.		s.	d.
Aralia Sieboldi, dozen	6	0	to 12	0	
Arbor vitæ (golden) dozen	13	0		24	0
Arum Lilies, dozen	6	0		12	0
Bedding out plants in variety, per dozen	1	0		2	0
Calceolaria, per dozen	4	0		9	0
Cineraria, dozen	0	0		0	0
Coleus, dozen	3	0		6	0
Deutzia, per dozen	0	0		0	0
Dracæna terminalis, doz.	30	0		60	0
,, viridis, dozen	12	0		24	0
Erica, various, dozen	9	0		18	0
,, ventricosa	18	0		24	0
Euonymus, in var., dozen	6	0		18	0
Evergreens, in var., dozen	6	0		24	0
Ferns, in variety, dozen	4	0		18	0
Ficus elastica, each	1	6		7	0
Foliage Plants, var., each	2	0		10	0
Fuchsia, dozen pots	4	0	to 12	0	
Genista, per dozen	0	0		0	0
Heliotrope, dozen pots	6	0		9	0
Ivy Geranium	4	0		8	0
Hydrangea, dozen	9	0		18	0
Lilies Valley, dozen	0	0		0	0
Lilium Harrisii, doz. pots	30	0		42	0
Lobelia, per dozen	4	0		6	0
Marguerite Daisy, dozen	6	0		12	0
Mignonette, per dozen	4	0		8	0
Musk, dozen pots	2	0		4	0
Myrtles, dozen	6	0		12	0
Nasturtiums, per dozen	4	0		6	0
Palms, in var., each	2	6		21	0
Pelargoniums, dozen	6	0		18	0
,, scarlet, doz.	3	0		6	0
Spirea japonica, doz.	6	0		12	0
Stocks, per dozen	3	0		6	0

CUT FLOWERS.

	s.	d.		s.	d.
Abutilons, 12 bunches	2	0	to 4	0	
Anemones 12 bunches	0	0		0	0
Arum Lilies, 12 blooms	2	0		4	0
Azalea, 12 sprays	0	0		0	0
Bouvardias, bunch	0	6		1	0
Camellias, 12 blooms	0	0		0	0
Carnations, 12 blooms	1	0		3	0
Cowslips, 12 bunches	0	0		0	0
Cyclamen, 12 blooms	0	0		0	0
Daffodils, Double, 12 bchs	0	0		0	0
,, Single, 12 bchs	0	0		0	0
Daisies, 12 bunches	2	0		4	0
Epiphyllum, 12 blooms	0	0		0	0
Eucharis, dozen	3	0		6	0
Gardenias, 12 blooms	1	6		4	0
Lapageria, coloured, 12 blooms	1	0		1	6
Lilium longiflorum, 12 blooms	2	0		4	0
Lily of the Valley, 12 sprays	0	0		0	0
Lily of the Valley, 12 bunches	3	0		6	0
Marguerites, 12 bunches	2	0		6	0
Mignonette, 12 bunches	3	0	to 6	0	
Pansies, 12 bchs	1	0		4	0
Pelargoniums, 12 trusses	0	6		1	0
,, scarlet, 12 trusses	0	4		0	6
Polyanthus, 12 bchs	0	0		0	0
Pyrethrum, doz. bunches	3	0		6	0
Ranunculus, doz. bunches	2	0		4	0
Roses, Red, 12 blooms	1	6		4	0
,, (outdoor)	6	0		12	0
,, (indoor), dozen	0	6		1	6
,, Tea, dozen	1	0		2	6
red, dozen (French)	0	0		0	0
,, yellow	2	0		4	0
,, (Moss), French	6	0		12	0
Spiræa, bunch	0	6		1	0
Stephanotis, 12 sprays	1	6		3	0
Stocks, 12 bunches	1	6		4	0
Sweet Peas, dozen	4	0		8	0
Tropæolum, 12 bunches	1	0		2	0
Tuberoses, 12 blooms	0	6		1	0
Wallflowers, 12 bchs	2	0		4	0
White Gladiolus, 12 sprays	1	0		2	0
White Lilac, per bunch	0	0		0	0
,, ,, French	4	0		6	0



FARMING REFORM.

The incursion of the British Dairy Association into East Anglia has naturally given rise to much discussion not altogether friendly in tone to the members of that Association, not a few of the farmers of Suffolk and Norfolk asking the very pertinent question, "Do farmers in other parts of England understand our business better than we do?" It is freely conceded that butter and cheese-making in those counties is—speaking generally—much below par, but there are many striking exceptions to this faulty practice, where certain local dairies maintain a high standard of excellence in butter-making at any rate, and this is certainly as much as can be said of many or rather most parts of England. If the home-made article were really of general excellence is it likely that we should have the produce of Denmark and Brittany ousting it from the market? It is certainly a disgrace to British farmers that this is so, and we freely acknowledge that the Dairy Association will do good work in showing by precept and example how butter should be made, but it is clearly in the wrong if it intends farmers generally to regard dairy farming in the light of a panacea for the agricultural depression.

Take first of all the question of climate. In Ireland and the west of England the mean annual rainfall is so much greater than in the eastern counties, that the fact ought to bring conviction to every thoughtful mind that climatic influences must have gradually led up to the style of farming which is found to prevail in the east and west. In the moist climate of Cheshire there is a free growth of herbage, such as we vainly long for in Suffolk, but the less humid climate of the latter county is specially adapted for the harvesting of seed, and when land is fully turned to account for that purpose it is not unprofitable. If any measure of reform is possible here it is to be found in improved culture and in the selection of pure samples of seed for sowing. Red and white Clover, Sainfoin, Rye, Rye Grass, and Tares or Vetches are still profitable crops to grow for seed.

Reform in dairy farming, so far as it applies to the farms of Suffolk and ordinary farm dairies generally, consists really in the substitution of good management for bad. The test is simple enough, and no farmer of ordinary intelligence can possibly require extraneous assistance in applying it to his own practice. Let us once more enumerate the points of real importance in dairy farming, and first of all turn to

The Cows.—In these we require neither pedigree nor imported animals, but rather well bred cows, either pure or cross-bred, of local breeds, such as are to be had in every county. As Suffolk is in question we may take the Red Polls as being deep milkers (the average yield being fifteen quarts daily), with milk of high quality, and as being large fleshy animals easily fattened for the butcher as they cease to be useful for the dairy. It is a noteworthy fact that, though not a dairy county, Suffolk has in the Red Polls so superior a breed of cows that they are alike useful for the dairy and stock-yard, and there is a large and growing demand for them both here and in America.

The Food.—This must be wholesome and nourishing, yet devoid of anything that can impart an unpleasant flavour to the butter. In summer it should consist entirely of green crops, beginning with Rye and following with Rye Grass, Lucerne, Sainfoin, Clover, Tares, Grass, Maize, and Sorghum. In autumn and early winter a mixed diet of Cabbages, Carrots, bran, crushed Oats, hay, and silage; later on Mangolds replace the Carrots, and Thousand-headed Kale the Cabbages. Each article of this dietary must be used in well balanced proportions, especial care being taken not to use enough Cabbage, Maize, or silage to spoil the milk for butter, as it is apt to do. Avoid oilcake altogether, and if Turnips are used they must be cooked and the water strained off. If possible use fresh spring water. The best arrangement we ever had was a flowing spring, from which the water was conveyed in pipes through cisterns in each yard.

Yards and Lodges.—These places should afford thorough shelter, be well drained, well littered with fresh litter daily, so that the cows always have clean dry bedding. We have seen admirable cow houses where no litter was used, and the asphalt flooring was kept scrupulously clean, the walls cleansed at regular intervals with limewash, and with thorough ventilation by means of louvres in the roof. Let no foul litter from stables be thrown into the cowyard, for cows will often eat this greedily to the detriment of the milk.

The dairy should be perfectly clean, sweet, and have thorough ventilation, and there should be nothing in its surroundings at all likely to cause the slightest foul odour to enter door or window. A floor of concrete faced with Portland cement is best, with slate shelving for the milk pans. Every utensil should be scalded and then rinsed in cold water after it is used. Churn at least twice weekly; stir the cream as each skimming is put into the crock; add no fresh cream at the time of churning, or for twelve hours previously, a slight ripening of cream being good for the butter. Test the temperature of the cream with a thermometer before churning, and see that it is 57°. In cold weather this is managed by putting the cream crock in warm water, and in hot weather in cold water; but it is much better for the butter if the dairy itself can always be kept slightly below, or at this temperature. Rinse the churn before using with hot or cold water according to the season. Churn slowly, stop at once when the butter comes; withdraw the buttermilk, and wash the butter three times in fresh spring water, and once or twice in salt water by placing salt in a muslin bag in some water. This is the best way of imparting a slight salting to the butter, and avoiding the use of crude salt; do not touch the butter by hand, but make it up by using a butter worker and slices.

Given due attention to the whole of these details in cowyard and dairy, excellent butter may always be had, and there would be no occasion to have butter factories. We make particular mention of this, because we have reason to suppose that such factories are recommended as a remedy for bad butter now taken to the shops from farmhouses. But no factory can make good butter from cream that is spoilt by inattention to one or other of the simple conditions we have enumerated.

WORK ON THE HOME FARM.

As we sit down to write this note we are longing for a few hours' rain for the spring corn, grass, and root crops. The longing is all the greater because we know in many favoured localities rain has fallen, and without a dripping June we dare not hope for that full measure of success for which we have striven so earnestly. Corn-hoeing ended, and the hoeing among root crops so far advanced, we could welcome rain heartily, but if the weather proves unkind the hay crop will be small, and spring corn must suffer too. There are excellent crops of Winter Tares, Sainfoin, and Lucerne now in use, and we earnestly wish that farmers upon whom a premature sale of lambs and sheep has been forced simply for lack of food, would give more attention to these valuable green crops. Lucerne especially should be sown so extensively as to render a supply of it from spring till autumn a certainty for all the live stock on the farm. Once well established in the soil in rows so that it may be kept clean, it is certain to give a bountiful summer supply of green food for several years, for the roots penetrate so deeply into the soil that it is literally droughtproof.

The first crop of Clover has been eaten by the sheep upon many farms, where they are so fortunate as to have it, but the failure the Clover plant last year, owing to the drought, was so general that a full crop now is exceptional, and both stover and seed is likely to be scarce and dear next season. On poor pasture hay cannot be a full crop, but where manure has been used regularly and in good time growth is vigorous enough, but even that would be the better for rain. Haymaking will probably be late generally, and we must push on the work briskly when it is once begun. A short hay crop does not always point to high prices, for foreign Oats and other imported food come into competition with it so much as to keep down prices.

Sheep-shearing has been done, and the lambs are withdrawn from the ewes. All the ewes unfit for breeding another season are draughted from the flock to be fattened for sale. This is best done in folds, and much good may be done to land now and onwards to the autumn in this way. When the ewes have fully recovered from any wounds caused by the shearing they should be dipped in Cooper's mixture to destroy ticks and lice, and to keep off the fly.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

Date. 1888. June.	9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of soil at 1 foot.	In the Day. Shade Temperature. Max.	In the Day. Shade Temperature. Min.	In the Day. Radiation Temperature. In sun.	In the Day. Radiation Temperature. On grass	Rain.
	Inches.	deg	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 3	29.872	71.6	62.4	S.E.	58.2	81.7	54.3	127.6	46.0	—
Monday..... 4	30.071	63.0	57.4	S.W.	60.1	75.2	51.8	121.6	47.6	—
Tuesday 5	30.149	52.1	47.5	E.	60.2	59.2	48.6	97.2	43.7	0.032
Wednesday.. 6	29.871	51.6	50.3	E.	58.3	60.2	47.2	81.2	46.2	0.017
Thursday.... 7	29.842	58.2	54.5	S.	56.4	69.8	46.1	116.9	39.9	0.052
Friday 8	29.755	62.2	58.0	S.E.	56.9	68.7	53.4	109.2	51.7	0.102
Saturday 9	29.575	55.9	54.6	S.E.	56.9	67.5	54.8	106.6	49.6	0.093
	29.877	59.2	54.9		58.1	68.9	50.7	108.6	47.2	0.276

REMARKS.

3rd.—A bright summer day.
4th.—Generally bright, but cloudy at times in morning and evening.
5th.—Cloudy and cool, with spots of rain in the afternoon.
6th.—Dull and damp, with slight showers.
7th.—Variable, with a very slight shower in the morning.
8th.—Showery early, some sunshine in the morning; showery afternoon, fine evening.
9th.—Gloomy, with showers in the morning; hot sunshine and slight showers alternately in the afternoon.

A very sudden fall of temperature between June 3rd and 5th, the maximum being 22.5° lower on the latter day. But for the heat of June 3rd the temperature of the week would have been below the average.—G. J. Symons.

THE DIFFICULTIES AND DUTIES OF GARDENERS.

DIFFICULTIES in some form or other have to be encountered by persons of every rank and calling, and gardeners have their share. Some possibly feel they have more than their share, but after a fair amount of experience, and not a very narrow field of observation, I have arrived at the conclusion that the greatest grumblers are not always the greatest sufferers. They think they are, of course, but they only know their own case, and are perhaps a little prone to magnify the disadvantages of the position and under-rate its privileges.

Less than two years ago a very good gardener felt himself so hardly used that he could "endure it no longer." On being somewhat closely questioned he had a difficulty in finding any other than a fanciful grievance. He received his wages promptly and regularly, and was surprised to hear of the possibility of difficulty existing on that score. He was not found fault with, which he accounted for on the ground that he did everything so well that there was no occasion for complaint; but still he was not happy. His chief cause of trouble appeared to be in receiving no praise. He was not applauded for everything he did. Compliments were not poured on him. If he had thought the matter over from the master's view as well as his own he might perhaps have comprehended that compliments and praise were not in the contract. In the end he left, on the chance of "getting a better place," and now would only be too glad to return to his old charge, which he ought never to have relinquished. He did not look at both sides of the question fairly, nor make allowance for the difference in temperament between himself and the master, who paid wages regularly and did not find fault. Encouragement, in the form of a word of approbation and appreciation now and then for work well done, is no doubt helpful to a man; it lightens labour, and incites to fresh effort, and though it may be conceded there are masters who are chary in dispensing even a smile of recognition, there are men who probably expect too much, and make themselves uncomfortable accordingly.

Let us look a little closer into the dual question—the duties and the difficulties of gardeners—fairly, and discuss the matter plainly, as it may possibly be of service to some uneasy fellow mortal who may be in a better position than he thinks, while it cannot make his lot any harder. The paramount duty of a gardener who is engaged as a servant, as all gardeners in private situations are, is to meet in the best manner possible the wishes of his employer, whose money he receives in consideration of services rendered. There are possibly men in the gardening ranks who may feel a little humiliated by being referred to as servants; but they are only the shallow-minded and vain, the great majority and the most able and genuine being proud of the positions they occupy when those in authority are considerate—that is, not unduly exacting or unreasonable. "Gentlemen born," as the Laureate puts it, are not as a rule oppressive, and those who are have relinquished the claim to the grand old appellation. They have their tempers, trials, and difficulties; but the true servant will, in turn, be considerate, and avoid as far as in him lies giving occasion by words or acts to call into action those traits of character that contribute to the discomfort of master and man. Fire cannot burn without fuel, and this should not be applied except for a distinctly good purpose, never to feed the flame that may grow into a destructive conflagration.

It were useless disguising the fact that there always have been men in the position of gardeners who have pursued a policy that is to be regretted, and by injudicious acts have engendered a feeling of mistrust instead of confidence, not towards themselves alone, which would be a small matter, but towards a community. Short-sighted, vain, self-willed, and ignorant men have much to answer for in prejudicing the status of the body to which they belong. The best educated, most intelligent, and most capable members of the craft never forget their position; but by their fidelity, ability, and demeanour win the confidence and even the friendship of those whom they serve. It happens occasionally that a gardener, impelled by a sense of duty in the real interest of his employer, has to stand firm against a suggested innovation; but his attitude then will be calm and respectful, and he will bring the power of reason and experience to bear to enable the matter and its possible consequences to be fully understood. If he fail in thereby making an impression, and receives an intimation that amounts to an order to carry out a prescribed course, his duty is then clear—to obey or resign. It is utterly useless and a most serious mistake for a servant to wage war with his master, as they cannot meet on equal terms. There may be valour enough on one side, but to persistently display it is foolhardiness when all the real power is on the other; the weaker must ever capitulate, and he will be compelled to retreat, it may be ignominiously.

We now arrive at a crucial point to determine, or a crisis, which possibly occurs to most men at some time, and often early in life. They have to obey or resign. Let them consider long and calmly before adopting the latter alternative. It may be the easier of the two, and by far the more agreeable to the feelings. But before the final step is taken let existing facts and future contingencies be fully and fairly examined. First, what is it you are expected to do? It is something contrary to your wishes, and to yield you think is to show weakness. Foolish idea; the most weak-minded man can act in that way. Strength lies in overcoming a difficulty, not in running away from it, and one of the most formidable obstacles to surmount is often self-pride. Let the matter be looked at in this way. You are in the position of head gardener, and cannot comply with the wish of your employer because you think it unreasonable. You have men under you, and wish them to do something that they may not feel agreeable, and hence they either evade the task or refuse. What do you do then? Capitulate? No! They either have to obey—obey you, resign, or be discharged. You are the master then, and exercise a master's strength; but at the same time you are a servant, and expect the master of all to yield in the event of a conflict; but he will not yield unless he is weak, any more than you would to your subordinate, whether both of you were unreasonable in your expectations or not. This is a plain way of looking at plain facts, and they ought never to be obscured by prejudice or sentiment.

It is easy to resign; but there is a future. That ought not to be forgotten. Nor must a gloss be put on present circumstances by a disappointed man. It is dangerous to resign as well as easy. Here is a man who "cannot put up with" something. He has a family dependent on him for support, and after meeting their wants can save little or nothing. He throws up his appointment in a moment of irritability without any substantial assurance of future employment, and with perhaps not twenty pounds in his pocket. He casts himself on the world, and trusts to be taken into the nurseries. But these establishments may be full, and the world full too. Then he says both are cruel because they starve his children. That is a misconception. Nurseries are not charitable institutions for the succour of unfortunate gardeners, but their proprietors are only too glad to help all the men they can and in whom they trust; and as to the world, it is the most kind to those who make the fewest mistakes.

Among the greatest errors for gardeners to avoid are precipitate resignations. I write from experience, having been a victim, I

cannot say of misfortune, but of misjudgment, from which it took me long to recover; and though difficulties arise now and then I have learned to make the best of them, and am happy and well-to-do in comparison with an old bothyite, who once had a gentleman's life as the head of a great garden, and who is now glad to work as a labourer for 14s. a week. He took a first step by an ill-judged resignation, and, as is not infrequently the case, all his after steps were downwards. There are numbers of similar reverses of fortune, and they should teach a lesson in these days, when so many men are waiting and watching for vacancies, and regretting their precipitancy in making vacancies for others. No gardener should hastily resign a charge on the mere chance of obtaining another who is not in a position to wait for a year at least without employment. His clear duty is to do the very best he can, even if he cannot do as he wishes, for his employer, as he will then be doing the best for himself, till the time comes for taking a certain step onwards and upwards in the march of life.—An Old Servant.

PETUNIAS.

The usefulness and beauty of Petunias have been amply proved by many cultivators. They are cheap, easily grown, and the flowers present exceptionally rich, varied, or delicate colours, recommendations that entitle them to general attention. There is, however, a suspicion that Petunias have been somewhat neglected in recent years—why, it would be difficult to say, but it is a kind of re-action that seems to follow popularity; and flooding the markets and catalogues with scores of named varieties invariably has some tendency in this direction, as purchasers become tired of the minute differences found sufficient for new names and special prices. A different method is now being adopted in the trade, only the select few of unquestionably distinct varieties receive particular designations, the others are classed under a general name as a special strain. This is far preferable in all respects; it gives greater satisfaction to purchasers, as in a packet or two of such selected seed they obtain all the varieties desired, and it is assisting materially in restoring Petunias to the popularity they so well merit.

Numerous as are the forms of cultivated Petunias they have all been obtained from the union of two species, the remarkable breaking up and combination of their characters having been accomplished within a few years after their introduction. The first of the two known was P. nyctaginiflora, which was found late in the eighteenth century by Commerson on the shores of the Rio de la Plata, South America. Upon the specimens then collected the botanist Jussieu based the first published description, figures, and name, the latter being chosen from the resemblance of the flowers to the Marvel of Peru. Possibly plants may have been raised soon after on the Continent, but the plant does not seem to have been grown in England until the second decade of the present century, when Mr. Robert Sweet and Mr. Anderson of the Chelsea Botanic Gardens both cultivated it and assisted in bringing it into notice, illustrations appearing about the same time in the "Botanical Magazine" and "The British Flower Garden." In both cases the plant figured has broad ovate hairy leaves, with five-lobed rather bell-shaped flowers, pure white, with a few greenish veins. Mr. Sweet seems to have been very successful with it both from seeds and cuttings, and a year or two later he gives the following account of a remarkable plant:—"In October, 1826, I turned out of a pot a seedling plant about 6 inches high, with two or three shoots, into a border by the side of a wall facing the south, where it continued to grow rapidly all last winter, and never had a leaf injured. In very severe frosty weather I covered it with a mat, but left it exposed whenever the weather was milder. By the middle of March it was 18 inches high with numerous branches, about half of which I was obliged to cut away in the beginning of April, when I first tied it up to a stick. After this it grew very fast, and by the end of May began to be covered with flowers. By the middle of July it was above 6 feet high with many hundreds of its large white flowers open every day, each flower continuing in perfection two or three days, and by the middle of August it was 8 feet high and bushy in proportion, covered with flowers from the ground to the top, some thousands being expanded at one time, so that at a distance it appeared like a white sheet."

P. nyctaginiflora rapidly extended in general favour and soon became well known, but does not seem to have produced a single variation until another species, P. violacea, also named Nierembergia phœnicea, was introduced, when some surprising results were quickly secured. This was obtained from Buenos Ayres, whence seeds were sent by Mr. Tweedie to the Glasgow Botanic Garden in 1830. It was of rather more slender growth than the other species, with smaller ovate leaves and reddish-purple flowers of moderate size, and was figured in several publications under the two names given. The idea of crossing these two distinct Petunias apparently occurred to several cultivators about the same time, and seedlings were recorded as flowering in different gardens in 1835 and 1836. In the former year an illustration was given in Sweet's "British Flower Garden" (new series, plate 268), of one of these hybrids under the name of Nierembergia Atkinsiana, raised by Mr. Atkins, a nurseryman at Northampton. The plant shown is intermediate in habit and size of flowers between the two species, but the colour is a uniform reddish-purple without any of the markings subsequently obtained. In 1836 flowers from a similar hybrid in the Manchester Botanic Gardens, but raised at Chatsworth, were figured in "Paxton's Magazine" (t. 173), where it is said Petunias could then be "purchased at moderate prices at almost every nursery around London and in other places." In this cross P. nyctaginiflora was the seed parent, and it differs slightly from the one figured by Sweet; the leaves are somewhat rhomboid, smaller than those of the seed parent, the flowers large of a deep blue purple, very handsome and similar to some of the purple coloured selfs still in cultivation.

It is rather strange and interesting that from the first crosses between these species of Petunias only self-coloured reddish or bluish purple flowered seedlings were obtained, and these results have been confirmed by subsequent experiments. A second crossing between the seedlings produced a remarkable change; the fixity of characters seemed quite lost, the colours were astonishingly varied, from white to the deepest crimson and purple, while still further intercrossing resulted in the colours running into veins, feathers, zones, and spots in a most diversified manner, such as are seen now in the best strains of seed. Not only this, but fringed flowers and double flowers in endless variety have been produced by a continuation of the crossing. As long ago as 1844, when a beautiful variety named punctata, edged with purplish blue, and dotted with crimson in a white throat like a Gloxinia, was figured in "Paxton's Magazine," it was said "the amazing numbers of beautiful varieties defy all attempts at classifying or even computing," and in florists' catalogues from that date to 1860 as many as seventy named varieties were often described. Now, it is rare that a list of named forms is seen, and from good seed the grower can raise his own new varieties and name them at his pleasure.

Seeds sown in moderate heat early in the spring yield plants that flower profusely during the summer months in the conservatory or greenhouse. They require a compost of light turfy loam, a little leaf soil, and a small proportion of well-decayed manure, a free porous soil without rank or coarse material suiting them best. Much care is needed in supplying water, as it is easy to give too much, and one of the enemies of Petunias under glass is mildew, to which they are particularly liable in dull weather if kept too close or too moist. To form specimens quickly several plants may be placed together in 32-sized pots, and secured to neat inconspicuous stakes. For baskets they are also well adapted, and in window boxes they look well. When out of doors, however, they are soon damaged in stormy wet weather owing to the delicate texture of the flowers, and bedraggled mud-spattered Petunias have an exceedingly woe-begone aspect.—L. C.

VEGETABLES FOR EXHIBITION.

CUCUMBERS.

(*Continued from page 484.*)

I have had very fine fruit from plants in pits and frames, but they were obtained from quite young plants. Those cut from old plants, or which say have quite filled the frames, are rarely of good colour, and greenish yellow fruits stand but a poor chance to win prizes at an exhibition where the competition is at all keen. A gentle hotbed, formed largely of old hotbeds, such as stable manure and leaves, with about an equal portion of fresh and slightly prepared heating material well mixed with it, is very suitable, a depth of from 3 to 4 feet, according to circumstances, being ample. I prefer pits with a hot-water pipe round for top heat, this being of good service in dull weather, but a frame set on a hotbed answers nearly as well. Sufficient short manure, and leaves, if these are available, should be thrown into the frame to raise the soil when put in well up to the light, and the same remark applies to the pits, a good mound of turfy loam or compost to be placed in the centre of each light, and if the trial stake kept plunged in the centre of the bed can be borne in the palm of the hand the planting may safely be done. One plant to each mound is sufficient, this being stopped at the second or third joint two or three days prior to planting. They ought to be planted in a sloping direction,

this admitting of their being pegged down without injury to the stem, and being given a little warm water, the bed and sides of pit or frame also moistened, the lights put on and kept rather close, a good start will soon be made. Four or five main branches ought to be pushed out by each plant, and a second stopping must be resorted to, if necessary, in order to secure them. As fast as the roots spread through the soil top-dress and add more of the same as first used, and gradnally lead them all over the frame, the haulm also being gradually trained over the whole of the space. The main branches being stopped when about 2 feet long will push a number of side shoots from which a few fruit may be at once taken—*i.e.*, if wanted for a show, otherwise they should be cropped very sparingly till nearer, or about ten or twelve days of the time. Keep the growths thinly trained, timely stopping with the finger and thumb being preferable to later pruning with a knife. Long Cucumber glasses are of great assistanee in keeping the fruit straight and clean, and these ought not to be bedded in the soil, or the under side of the fruit will be yellow instead of green. Lengths of bent zinc and other contrivances are frequently adopted for keeping the fruit straight, but most of them are apt to blanch the under sides, which, it ought to be generally known, is a great disappointment. Nor should the fruit be left too long on the plants, fat overgrown specimens always "going down" before fresh, moderately and evenly thick, and straight Cucumbers.

There yet remain a few remarks to be added, these being applicable to both house and frame-grown plants. Cold currents of air are most injurious to Cucumbers ; in fact, a great amount of dry air is not good for them at any time. A "nick" of air at the top ventilators or at the back of the lights should be given soon after the sun shines well on the house or frames, the aim being to prevent a sudden great rise in the temperature, which may need much colder air to counteract. Supposing the night temperature ranges from 70° to 75°, and which is not very high for the summer months, air should be given before 85° is reached, and a little more added in order to keep the temperature near that figure. Some kind of light shading is very necessary, especially in the case of house-grown plants. This, if in the shape of thin blinds, should be put on before the sun has gained much power, and will lessen the need of giving more air than is good for the plants. Failing blinds, a permanent shading of "summer cloud" or a thin coating of milk and whiting applied with a brush must be given ; the plants to be well syringed in the morning some time before air is given, and again when the house is closed early in the afternoon. The walls, paths, and soil should be damped whenever found dry, and with plenty of moisture thus maintained in the atmosphere the house may be closed early enough to run up the heat to 100°. Frames and pits to be very similarly treated, the aim being to enclose as much sun heat and moisture at all times consistent with safety, while daylight lasts especially, so as to be independent of any artificial heat. Very little fire heat, as a rule, is needed by the house and pit-grown plants, nor are any "linings" necessary for the frames on hotbeds. Red spider to be kept down with the aid of the syringe and an occasional coating of flowers of sulphur, this being mixed with the syringing water ; thrips, green and black fly to be destroyed by gentle fumigations with tobacco paper or steam generated by pouring tobacco water on hot bricks or pipes, and mealy bug must be caught and crushed.

From the first the plants ought not to suffer by want of water at the roots, nor on the other hand should they be unduly saturated. The most judgment is required in watering after a top-dressing has been given, as it is possible for the fresh soil to be quite moist enough, and that underneath much too dry. Nothing but clear liquid manure should be used, as anything that clogs the surface, this including farmyard liquid manure and soot water, soon does much more harm than good. Very light sprinklings of Beeson's, Standen's, or other special manures, washed in, are safe and beneficial, and on no account use other than tepid water.

For exhibition purposes, Tender and True, when at its best, is unrivalled, but only a few succeed in growing it to perfection, and on the whole Carter's Model will be found much more reliable. It is of robust free-bearing habit and the fruits are handsome. Telegraph in good condition is also hard to surpass, and I have recently cut several very pretty fruits of Cardiff Castle. It is rather short, but this is its only fault.—EXHIBITOR.

MY AURICULAS IN 1887.

(*Continued from page 483.*)

AND now with regard to sorts. Are we to discard all the old varieties except three or four, and to regard the new ones only ? In the name of the older school of florists I say, No. There are some, indeed, which must go. As I have said, through the kindness of friends I had a few of the newer sorts—viz., Conservative, Sylvia, Mrs. Douglas, and F. D. Horner. The two former of these I flowered well, and I consider the former very much in advauce of Sylvia. It is a fine flower, with a beautiful tube and dark body colour, with good paste ; the edge is certainly not as pure a white as Reid's Acme or Taylor's Glory, or that of a flower much in favour in the north, Summerscale's Catharina. It is a most abundant breeder, and indeed the difficulty with it is to get a sufficiently strong plant, as it is so apt to go off into offsets, which of course take from the vigour of the plant. Sylvia, while it throws itself up well above the foliage and bears a large truss, is not so fine or elaste a flower as its half-sister Conservative. Mrs. Douglas, a seedling of Ben Simonite's, is a very pretty purplish blue self of good habit, while F. D. Horner is worthy, when at its best, of the name it bears. It is one of that rather restricted class the green edges, amongst which the northeners seem to be working very assiduously, and probably our children may derive benefit from their good work. The edge of F. D. Horner is a good green, and all its properties are good. It is also a good doer, which some of the older green edges were not. Page's Champion, almost unsurpassable in its bright green edge ; Booth's Freedom, which I remember half a century ago, and Colonel Taylor, were all bad growers ; indeed the first two are now almost like the Dodo or the Great Auk ; and what grand blooms of Freedom I have seen in the days long past ! It may be like the delusions of early days, which we exaggerate to our contemporaries of to-day, declaring that there were never such "cakes and ale" as we used to have ; so perhaps when I picture to myself one of Dr. Plant's grand blooms of Freedom as far surpassing anything we now have, I may be drawing an ideal picture which, confronted with the original, would never stand a chance of being recognised. There are, however, I think a few varieties which we shall be glad to possess, which though they may not be equal to "the first three," still, like David's warriors, may stand a chance in the strife. In connection with this subject I have been not a little amused in looking through some old volumes of the "Florist" of thirty years ago and more, and am not of the opinion that as it was said that he was the best general who made the fewest mistakes. So it is in most things, and I should be very sorry to be pinned to the statements I or others made in those days with regard to the Auricula. At that time there were several able growers who detailed in its pages their opinions and experiences—such men as Mr. Jeans and Mr. Bromhall, who were the predecessors in this way of Mr. Horner, Mr. Douglas, and others. Their collections were, however, small, for I saw them, but their cultural knowledge was great, and they had the power of pointing it to others in a way sure to interest. In one of those volumes Mr. Jeans gives the following list of flowers that were indispensable in 1858, just thirty years ago.

GREEN-EDGED.—Booth's Freedom, Hudson's Apollo, Leigh's Colonel Taylor, Sutton's Imperator, Oliver's Lady Anne Wilbraham, and Page's Champion.

GREY-EDGED.—Chapman's Maria, Chapman's Sophia, Dickson's Unique, Fletcher's Mary Anne, Fletcher's Ne Plus Ultra, Grimes' Privateer, Headly's Superb, Lightbody's Sir Charles Napier, Maclean's Unique, Smith's General Bolivar, Sykes' Complete, Waterhouse's Conqueror of Europe, and of these he selects Grimes' Privateer as the best.

WHITE-EDGED.—Ashworth's Regular, Gairns Model, Heap's Smiling Beauty, Hepworth's True Briton, Lightbody's Countess of Dunmore, Lightbody's Fair Maid, Smith's Ne Plus Ultra, Taylor's Favourite, and Taylor's Glory.

SELFS.—Chapman's Squire Smith, Faulkner's Hannibal, Lightbody's Meteor Flag, Martin's Mrs. Sturrock, Sims' Eliza, Sims' Vulcan, Smith's Mrs. Smith, and Spalding's Blackbird.

Of flowers not then let out, but of high excellence, he gives Campbell's Admiral Napier, Smith's Lycurgus, Headly's George Lightbody, Lightbody's Mrs. Headly, Lightbody's Sir Colin Campbell.

He also gives a list of flowers with edges neither green nor grey decidedly, but coming sometimes pure in both, amongst which are found some of the most beautiful and perfect Auriculas.

Amongst these he enumerates Ashton's Prince of Wales, Dickson's Duke of Cambridge, Lancashire Hero, Oliver's Lovely Anne, and a number of others. As one reads this list it is like the roll call after the battle. How few, alas ! now answer to their names. It shows what a difficult class the greens is, to find that five out of the six are still grown, and although defects may be found in them, yet I would not willingly discard Freedom, Apollo, Colonel Taylor, Imperator, Champion, or Lovely Anne. Then in greys I still keep Waterhouse's Conqueror of Europe, of which I had a very fine truss this year ; Sir Charles Napier, and Maclean's Unique are worthy of a place, and of course Lancashire Hero. It is curious to read the high encomiums given to Grimes' Privateer by such a grower as Mr. Jeans, for it is a flower one hardly ever sees now. Then in whites

I would like to retain Smiling Beauty, Glory, Ne Plus Ultra, and Hepworth's True Briton, while amongst selfs surely Pizarro, Blackbird and Mrs. Sturrock should not be discarded.—D., *Deal.*

(To be continued.)

ORCHARD HOUSES.

SINCE the publication of the exhaustive paper in our columns as prepared by Mr. T. F. Rivers and read at Birmingham, inquiries have reached us for particulars of the orchard houses at Sawbridgeworth, and plans of them have been requested. As the sixteenth edition of the "Orchard House" is exhausted, and some time must of necessity elapse

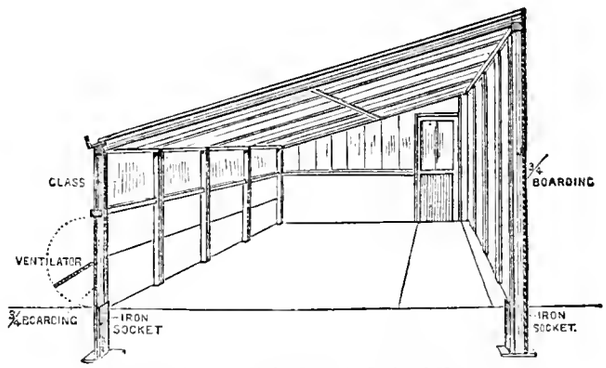


FIG. 68.—Section of the Lean to Orchard House.

before the seventeenth can be issued, Mr. Rivers has obligingly placed at our disposal illustrations of his structures for the benefit of those of our readers who may desire to erect structures of a similar character.

THE LEAN-TO ORCHARD HOUSE.

I will suppose, says Mr. Rivers, an orchard house 30 feet long is required. A ground-plan 30 feet long and 12 feet 6 inches wide should be marked out. Then six posts of oak or good yellow deal, 5 inches by 3, and from 10 feet to 11 feet 6 inches in length; or of larch-poles 16 inches in girth, cut in two, and the flat sides placed outwards, must be firmly fixed 2 feet in the ground: the ground ends, before fixing, should be charred 2 feet 6 inches from the bottom, and then have a coat of boiling coal-tar, which adds much to their durability. They will form the back line of posts, standing 9 feet 6 inches in height from the surface of the ground. For the front wall six posts of the same thickness, 6 feet 6 inches long, must be firmly fixed 18 inches in the ground, so that they stand 5 feet out. Two posts will be required at each end (at one end, if only one door is wanted); these will form the door-posts. On these posts, both at front and back, must be nailed a plate 4 inches by 3, on which the rafters are to rest; the posts are thus arranged in two lines.

The rafters must be 14 feet long. A 9-inch deal—*i.e.*, a deal 9 inches wide and 3 inches thick, will make four, each 4½ inches by 1½, or nearly so. These are light, strong, and economical. The rebate should be half an inch wide for the glass to rest on (not too much for glass 20 inches in width). I find that scarcely any breakage takes place from frost owing to the large pieces being elastic; 16-oz. glass answers, the extra cost of 21-oz. glass is, however, worth incurring.

On and outside the back posts three-quarter-inch well-seasoned deal boards should be nailed. In the back wall thus formed sliding shutters in grooves 3 feet by 1 foot must be fixed to act as ventilators—two close to the roof and two 18 inches from the surface of the ground (the lower shutters in the back wall must always be on a level with the

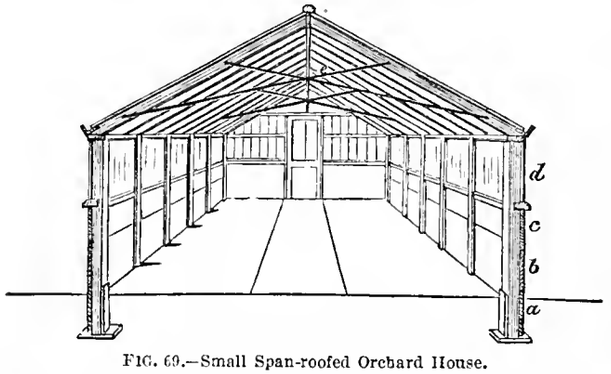


FIG. 69.—Small Span-roofed Orchard House.

a, Iron socket; *b*, Boards to the ground; *c*, Ventilating shutters; *d*, Glass 18 inches wide.

ventilating shutter in front); if two more be added to the right and left of the lower shutters all the better: in summer it is impossible to give too much air.

The front and ends (except the doorway) must also have three-quarter-inch boards nailed on outside the posts; one of them, the upper one in front, to be on hinges, so as to let down the whole length of the house: this, with the back shutters, when all are open in hot weather, will ventilate thoroughly.

Where there is a brick or other wall to serve as a back wall it may be built against it with a great saving in expense; but as sliding shutters cannot conveniently be let into such walls ventilators may be made at the top of the slope of the roof by having every alternate square fixed in a wooden frame, which should run in a groove and be drawn up and let down with a cord, to which an iron weight should be attached to keep the sliding sash in place; with this the ventilators can be regulated at pleasure. An equally or more convenient mode of ventilating at the top of the sloping roof is by a continuous shutter of wood in 10-feet lengths, on hinges opening upwards raised by a line and pulley; this should be 1 foot wide at least. In a house not more than 10 feet wide this mode of ventilating at front and at the top of the roof will do very well; but in lean-to houses of greater width it is necessary to have shutters in the back wall on a level with those in front, so that two currents of air may meet and "stir up" all the air in the house.

SPAN-ROOFED ORCHARD HOUSE.

I now give a description of my favourite sort of orchard house, the span-roofed. In houses of this kind Peaches and Nectarines do not, perhaps, ripen so early as in lean-to houses, but quite as early as on walls. Owing to their being detached they can be more thoroughly ventilated, and the fruit from them is generally piquant in flavour.

In the north of England and all cold or moist districts, of which England contains too many, in the Highlands, and in the cold stormy climates of the north of either Scotland or Ireland, it will perhaps be quite necessary to introduce hot-water pipes into houses in which Peaches, Nectarines, and Apricots are to be cultivated, not to force them, but to insure their ripening properly.

Height of my small span-roofed house at sides, 6 feet; height to ridge, 10 feet width, 14 feet. The roof rests on oak posts 5 inches by 3 inches, 5 fee apart; but I now find deal posts let into iron sockets are preferable to any other mode of building orchard houses of wood, and the usual way of building with brick foundations and sills may be adopted.

The rafters are 20 inches apart; the roof is glazed with 21-oz. glass, in pieces 20 inches by 15 inches. The two ends are glazed down to the lower edges of the glass at the sides. The rafters are 3 inches by 1½ inc

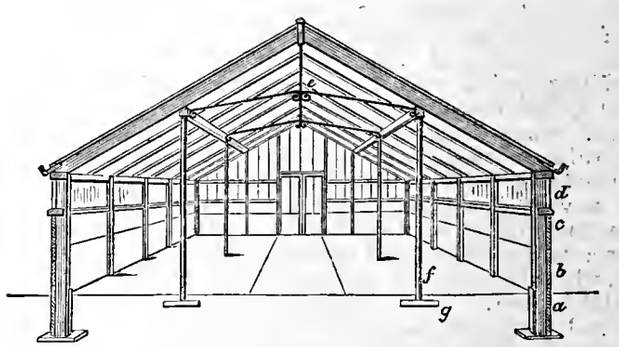


FIG. 70.—Large Span-roofed Orchard House.

and are tied together at the apex of the roof by a light flat iron tie screwed to every fourth rafter.

The path is down the centre, and the rows of trees may be placed on each border 3 feet from stem to stem, so that the sun may shine on every leaf. This is most essential; for I have occasionally had some of my Peaches deficient in flavour, and on examination have always found the trees too much crowded, so as to shade each other. In these small span-roofed houses the trees placed as above form a charming avenue, and are looked down upon by the cultivator, so that every leaf and fruit is seen.

The small span-roofed house referred to will be found an agreeable and economic structure; but large gardens require large houses, and for these the following construction may be confidently recommended:—A cheap large span-roofed house 20 feet wide and 12 to 13 feet in height to the ridge may be built after the following manner:—Oak posts or deal posts in cast-iron sockets 6 inches by 4 and 9 feet long should be placed flatwise, so as to stand 5 to 5½ feet clear out of the ground and the soil well rammed round them, or concrete poured in so that they stand firmly. These posts should stand in two rows 20 feet apart, 6 feet apart in the rows. On them should be nailed the plates, to receive the end of the rafters, which may be nailed on to them. These plates should be 4 inches by 3. The rafters should be 4½ inches by 1½, and nailed to the ridge-board at the apex of the roof, which should be 12 feet from the surface. The ridge-board should be 7 inches by 1½. The rafters must be placed 20 inches asunder. The sides and ends of the house should be formed of three-quarter-inch boards; for ventilation a shutter 18 inches wide made into 15-feet lengths and opening on hinges downwards, the lower edge 18 inches from the ground, should be placed on each side: these are for the admission of cool air. For the egress of the heated air an aperture 1 foot deep should be made at each end just under the apex of the roof. To this a shutter on hinges should be fixed, and this should be kept open from the beginning of June till the end of September. The roof should be supported, and kept from going out either by light "collar-beams" of wood to every sixth rafter, by iron rods so disposed as

to tie the roof securely, or, best of all, by two rows of iron pillars formed of 2-inch gaspipes, which are very cheap, 6 feet from each side; the lower ends placed in the ground, and let into a small square of brickwork and cement, the upper ends let into the purlin. These pillars should be about 10 feet apart.

It will be seen from this description that a house built after this

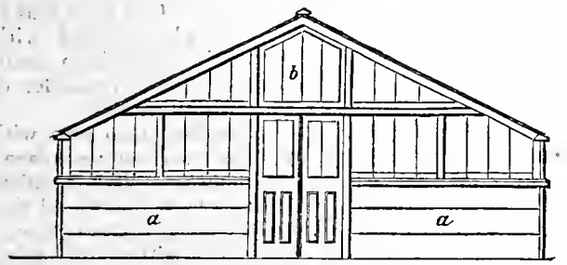


FIG. 71.—End elevation of an Orchard House 24 feet wide.
a Glazed shutters on hinges, opening downwards. *b* Sash for egress of heated air, opening downwards.

method is a plain but useful structure, for its sides, ends, and doors (there should be one at each end in the centre) are all of boards, and its roof only of glass. Nevertheless, this description of orchard house will give fruit in as great abundance and of as fine a flavour as a house built ornamentally and at a great expense.

In June, 1860, a house was built here, which for strength, cheapness, and lightness of construction is both eligible and agreeable (see figs. 70 and 71). It differs from the houses formerly built and recommended in having no raised brick borders, by which a considerable saving is effected. No inconvenience will arise from the trees standing on the ground level, for it is only necessary to cultivate the trees as pyramids or half-standards for the central border and as dwarfs with stems a foot taller than usual for the side borders. It is 100 feet long, 24 feet wide, 12 feet high in the centre, and 5 feet 3 inches at the sides. Sides and ends are glass, and on each side and at both ends is a glazed shutter 18 inches wide, the lower edge 18 inches from the ground on edges opening downwards for low lateral ventilation, and below that glass to the ground. At each end, just under the gable of the roof, are openings 3 feet in depth, to which sashes are fixed; these are to be open all the summer to let off the hot air, and this is all the top ventilation necessary.

The roof, which is formed with light rafters 3½ inches by 1½, is sup-



FIG. 72.—Dwarf Peach Tree.

ported on each side by seven light pillars 1½ inch in diameter fixed to a bar of iron, which is let into the rafters. Each row of pillars (*f*) is 6 feet from the sides of the house, so that there is a border on each side 6 feet wide and an area in the centre 12 feet wide.

In addition to the ventilation above described, Mr. Rivers adopts with great success a simple plan he has devised of admitting air through underground drain pipes, one end of these air ducts passing under the sill to the outside, the other rising through the floor about the centre of the house, or where required, and covered with a moveable lid for regulating the ingress of the air. Mr. Rivers attaches great importance to this method, as in cold weather and when forcing the side ventilators cannot be safely opened. Nothing could surpass the healthiness of the trees in a large house (from which Peaches were being sent to market early in May) in which this underground system of ventilation was mainly relied on for keeping the air sweet to the ground. The method will be shown in an illustration of a very fine structure in the next edition of the "Orchard House" which is now in preparation. The trees referred to were in pots, and are certainly not exaggerated in fig. 72. Pyramid and standard trees occupy the central border in the larger houses.

HARDY HERBACEOUS PLANTS FOR FORCING.

IT is not generally well known to what extent hardy herbaceous perennials are suited for forcing, or what may with advantage be employed for the purpose named. Having some experience in this direction, and believing that I have, so far, been successful in my endeavours, I will enumerate some of those which I have found most useful, by which I mean those which I have found best adapted, either for the embellishment of the conservatory, for decorative purposes generally, and for cutting. There are hosts of such hardy plants which, if put to their greatest use, would prove of the utmost value to those who have to provide cut flowers in these times in such endless quantity. Left to themselves, some which I shall mention by-and-by are almost worthless, but if cared for and grown in a proper manner are well worthy the time bestowed and the cost entailed. For years past I have given more or less attention to the forcing of hardy plants, and have rarely found anyone speak disparagingly of the plants thus treated; in fact they could not when they beheld them in equally as good condition as they can be produced naturally out of doors, but some weeks before their flowering was dreamt of. In this particular I consider we have the fullest value for our labour, for if by judicious forcing the flowering season of any plant can be exteuded, we have certainly gained a point.

But let us compare the relative value of forced and unforced plants, or, in other words, of flowers at their natural season against those produced by artificial means three or four months previously. Take for example Spiræa japonica, and the tens of thousands which annually find their way in and out of Covent Garden Market alone. This plant is almost valueless in England if allowed to flower at its natural time—*i.e.*, July out of doors. It is doubtful, too, whether it is ever met in good condition in the open in this country on account of the late spring frosts, but view it as a pot plant flowering at Christmas and onwards, six months before its natural period, and we find a plant of high decorative value. Lilies of the Valley, again, we see in the florists' windows in midwinter at something like 2s. a bunch of six sprays; the same quantity, though perhaps a little inferior in quality, being offered in the streets in May for the modest sum of 1d.; or compare the price of a bunch of the golden double Daffodils in January with what they will command in the month of April; while for another instance we may look at the old white garden Lily, the Madonna Lily of the Italians. This one in itself is an extraordinary example of what early forcing may do, as by its adoption two crops of flowers may be had in one year—that is, those which are forced for Easter, or even earlier, may be had in flower again in the autumn and winter ensuing provided they are cared for after the first flowering and not turned out of doors as soon as the first crop of flowers are gathered. Only one other Lily has this tendency to produce two crops of flowers in one season, and this is L. Harrisi, but as the flowers of L. candidum are of a much more serviceable size individually, and produced in greater numbers from good bulbs, which latter may be procured at a mere fraction of the cost of L. Harrisi, it would not take long to decide in favour of candidum. But saying this I do not wish to underrate the value of L. Harrisi, which is undoubtedly a grand Lily. Instances, however, such as these might be freely multiplied, for there are numbers of plants whose value might be enhanced by the ready manner in which they submit to hard forcing. All these, however, are well known, and as they form a great feature with many market florists, and are consequently well known as good forcing subjects, I will now direct attention to some few things which are not generally regarded as suited to the purpose named.

To fully illustrate this I cannot do better than refer my readers to the groups of herbaceous plants recently exhibited at the Royal Botanic, Regent's Park, and the Royal Horticultural Society's grand Show held in the gardens of the Inner Temple. It is especially noteworthy that while these groups contained some of

our best and most striking perennials not one appeared drawn or weakly by having been subjected to artificial heat, in support of which it may be remarked that many were exhibited naturally and without sticks. As I took special note of one of the groups I will name some of the most worthy. A central position was given to Lychnis vespertina plena, also called the Double White Campion. This is one of our handsomest perennials. It is one of the most floriferous of hardy plants; it may be planted out in good rich soil, and if lifted in the end of September or before sharp frosts a rive, potted and placed in a cool greenhouse, it will continue to flower till Christmas, thus showing with a little timely assistance one of the very best hardy plants in cultivation may be had in flower for eight months of the year. When so much can be said of a plant with pure white double and fragrant flowers I think it only fair to assume that it is highly valuable if utilised to its fullest extent. It delights in generous treatment at all times. Another conspicuous plant was the double scarlet Geum, G. coccineum fl. pl., the vividness of which is fully equal to that of a scarlet Zonal Pelargonium. This is also profusely flowering and very ornamental.

Another telling plant was the Golden Columbine, Aquilegia chrysantha. This with its graceful and elegant foliage and long spurred characteristic flowers formed one of the most beautiful of the group. It is one of the most delightful plants of my acquaintance, and when grown under glass seems even more beautiful than in its natural element in the open border. Years ago I grew this plant under glass, and it always attracted a good deal of praise. The ladies were particularly fond of its flowers by reason of their picturesque and pleasing form. For vase decoration it is unique, while for several years past the ladies exhibiting at the horticultural shows in this district are always anxious to include this one in their arrangement, and right well it looks in large gardens, and particularly where plants are used for indoor decoration extensively this will be found most useful, and being quickly grown from seeds the outlay is not a severe item, while the return is almost without limit. Just imagine a fine plant of this 3 feet high and nearly as much through in the middle of May, not a mere pigmy this, but a veritable specimen such as any one may admire with ease. There were also the double crimson Pæonia, P. officinalis rubra pl., with its gorgeously coloured blossoms, and some varieties of single Pyrethrums, very pleasing and effective. The double and single Pyrethrums are excellent for forcing if treated properly, they are so pleasing and durable and very free flowering.

Yet another instance, Doronicum austriacum, which may be taken as the best of the genus. The flowers are beautifully formed, clear in colour, freely produced, one plant having nearly 200 flowers. In height it is not quite 2 feet, and is, therefore, self-supporting. The other forms under notice, as caucasicum, Clusii, plantagineum excelsum, are all good border plants, the last having very handsome flowers, but the plant for the purpose is D. austriacum. I well remember Mr. W. Spinks, of the Harborne Road Nurseries, Birmingham, trying his hand with this plant for early work some years ago, when the demand for such plants was at its height, and what a success he secured. It was grown in 6-inch pots, and from a decorative point of view eclipses all the Marguerites I have seen. It is not adapted to hard forcing, and is best brought on in a cool temperature, such as the cool conservatory. In such a place in early spring a few pots of this would enliven the surroundings beyond measure. I regard this Doronicum, taking into account its perfect hardiness, its easy culture, combined with its great usefulness, one of the most valuable plants either the amateur or professional gardener can be possessed of, while for spring bedding *en masse* it has no equal. Its natural flowering period is from the middle of March to the end of May.

Take again the German Irises with their exquisitely shaded blossoms. Particularly noticeable were the varieties Princess of Wales, Darius, Duc de York, the first named being the purest white among the Flag Iris. Darius has crome-yellow standards, while the falls are bluish lilac reticulated with white and margined with pale yellow; it is an exquisite variety. The other variety named has flowers of a glistening rosy purple, and then there was the old blue Flag, bold and very effective, still one of the most showy of its race. Many of these Irises may be had in flower weeks before they can be had out of doors, which must be a great advantage. It is also worthy of note that these Irises will expand each bud in water after the first has opened, thus rendering their handsome flowers so characteristic of some Orchids still more valuable. Then if we would turn to Liliums we find the lovely L. Harrisi, L. longiflorum eximium, L. davuricum erectum, L. colchicum, and L. pomponium rubrum all well represented; the best of these, however, for forcing are the three first named, with candidum previously mentioned. Take again Cypripedium spectabile, which was in grand style, and here we have a plant in point of beauty fully equal to the best tropical species and a long way ahead of many of them. To look momentarily at some more familiar we find Spiræas japonica and palmata, Dielytra spectabilis, and many more. It would, however, be difficult to name a more truly beautiful plant than Hemerocallis flava; in habit elegant, while its lovely fragrant golden blossoms is not surpassed by the most chaste of the Liliums. It is really difficult to understand why they are not grown under glass more than they are. Can it be that they are not sufficiently known to be so useful when forced with other things for early work? If this be so it is only fair to assume that the group in question has acted as a seasonable reminder of what may be done with some of our best hardy perennials.

But I will only ask the reader in conclusion to bear with me a few moments longer while I mention two commonplace plants made doubly valuable by subjecting them to a little artificial heat. They are the Winter Heliotrope, Tussilago fragrans, and the Buckbean, Menyanthes trifoliata. These are both common, though none the less beautiful or valuable. Everyone will readily admit that there is not too great a quantity of fragrant flowers at Christmas I am sure, but by including the Winter Heliotrope we have one of the sweetest flowers of the year. The strongest crowns should be lifted and potted three or four in a pot in September, and placed in a cold frame they flower finely for Christmas. It will succeed in almost any soil, preferably a stiff moist clay. The Buckbean is a native aquatic, sending up its white beautifully fringed spikes, which closely resemble those of the Horse Chestnut in form. To be successful with this it should be collected in quantity where it abounds in the month of November; and having freed it from mud and dirt simply cast it into the water tank in the greenhouse, or if an aquatic tank exist so much the better. In the early months of the year it will surprise all who have the pleasure of beholding this British weed in flower. It is abundant in many parts of England, and those who have not tried it should do so. Such, then, are some of our best hardy plants which may be forced.—J. Howard.

WATERING.

I think "A Kitchen Gardener" deserves the hearty thanks of every reader of the Journal for so carefully expounding the important practice of watering. It is a subject that has always deeply impressed me. When I first started using a watering pot I was taught to do so carefully, but at the same time quickly. I have since been thankful for the care bestowed upon me in my earlier career, for I have noticed repeatedly how common are the errors mentioned by "A Kitchen Gardener," not only amongst young men but amongst their leaders as well. It is surprising to note the time it takes some men to water a house of plants—men who are in the habit of attending to the same plants day after day, and who should know almost to a certainty which plants require water and those that do not; those that are root-bound and those that are newly potted; those that need an unlimited supply and those that require careful management; in fact, he should know the individual requirements of every plant. He will be easily guided by the weather and the external surroundings. There are some plants which can scarcely have too much water: take for instance a house of Ferns. If they are healthy and full of roots they require an unlimited supply, and without such a supply they will soon show signs of degenerating. All florists' flowers, such as Pelargoniums, Hydrangeas, Marguerites, &c., that are grown as large as possible in small pots for conservatory or house decoration must have abundance of water, especially during the summer months. This is a case where every plant can be watered without the slightest fear of doing injury. It is annoying to see a man rapping the pots with his knuckles, or feeling the soil in such a case as this. Certainly they may look a little damp on the surface early in the morning, but an observant man must know they will require watering half an hour after the sun strikes on the pots. I do not think there should be the slightest difficulty in watering soft-wooded plants; all that is necessary is a little common observation. But when we come to the hard-wooded section more care is required; such plants as Azaleas, Camellias, Heaths, Epacrises, and the choice Rhododendrons always require careful management in watering. But I feel sure in the majority of cases hard-wooded plants do not get sufficient water during the growing period. Camellias and Azaleas require an enormous supply during the summer. As "A Kitchen Gardener" mentions, it is ruinous to allow these plants to droop. How many Camellias have their young foliage scorched yearly through being too dry at the roots? How many cast their buds from the same cause? Why do we see hundreds of Chrysanthemums with 3 or 4 feet of leafless stems year after year? I have derived great benefit by using pans, as suggested by your correspondent, especially for stove plants grown in small pots for furnishing purposes. I find it impossible to keep Palms, Dracænas, Dieffenbachias, &c., in a healthy condition without them. For forcing Strawberries they are invaluable, at least I mean the later plants; for the early crops that are ripened in March I prefer pieces of turf. Early in the season the plants do not absorb so much water, and it is a nuisance to have to empty the water out of the pans, which if left in soon becomes sour, while it can drain steadily through the turves. But for all crops ripened in April, May, and June they are indispensable. I quite agree with "A Kitchen Gardener" as to the utility of syringing

the pots. I find it an excellent plan. When watering the stoves in the early morning water all the plants that require it, syringing the pots and plants heavily; this we do nearly every morning during summer, and I find it saves much watering, besides promoting a genial atmosphere in the house. I do not think there should be any difficulty in watering Peach houses or vineries, especially when it is known what materials the borders are composed of and the amount of drainage they possess. An intelligent man will always have these points before him, and with the weather, mulching, &c., to guide him no serious mistakes in watering should occur.—JAMES B. RIDING.



ROSE SHOWS IN 1888.

June 26th.—Boston.
" 27th.—Alexandra Palace.
" 28th.—Brockham and Ryde.
" 29th.—Maidstone.
" 30th.—Colchester, and Reigate.
July 3rd.—Bagshot, Canterbury, Diss, and Hereford.
" 4th.—Croydon, Dursley, Farnham, Hitchin, and Richmond (Surrey).
" 5th.—Bath, Farningham, and Norwich.
" 6th.—Sutton.
" 7th.—Crystal Palace (National Rose Society).
" 10th.—Gloucester, Ipswich and Oxford.
" 11th.—Ealing and Tunbridge Wells.
" 12th.—Birmingham, Carlton-in-Lindrick, and Winchester.
" 14th.—Eltham and New Brighton.
" 16th.—Newcastle-under-Lyne and Christleton.
" 17th.—Leek and Ulverstone.
" 18th.—Birkenhead.
" 19th.—Helensburgh.
" 20th.—Darlington (National Rose Society).
" 21st.—Manchester.
" 24th.—Tibshelf.

In the case of the Alexandra Palace, Birmingham, and Boston, where the shows extend over two days, the date of the first day's exhibition only is given.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

ROSE PROSPECTS.

THE recent heavy showers of rain came at an opportune moment for my Roses, which in a somewhat light soil were beginning to suffer at a critical period, just as the buds were expanding. The result was that we have had several basketfuls of fresh plump blooms, and the supply has only been checked within the last few days by the cold winds and low temperature. Sunday, Monday, and Tuesday were very unseasonable, an east wind prevailing with leaden skies, quite winterly in fact, and slight frost was experienced early on Monday morning, the only perceptible damage, however, being noticed in the case of a few exposed Potatoes. Some of the delicate Teas and light coloured Hybrid Perpetuals show a little searing in the edges of the petals. We have an unpleasant proportion of hard green centres in the blooms this season, but green fly has not troubled us materially. Caterpillars have, however, been abundant and destructive, necessitating close watching, picking, and pinching. Blooms are numerous, and this is an important point with us, for we do not exhibit, and though we have a keen appreciation of quality, quantity stands first, as moderate sized flowers, if fresh, bright, and fragrant, are quite as useful as the huge examples sometimes seen at shows. La France and Charles Lefebvre are our two favourites, and within the past week the ladies have cut a couple of hundred blooms of these two varieties for themselves and their friends.—C. M. S.

A ROSE ENEMY.

I PRUNED several young standard Rose trees this year, and some animal or bird has eaten the bark off the very small piece of growth that remains. As I prune to two eyes in most cases, I do not leave much. As I never can see any grub on a Rose so eaten, and as many of my friends are anxious to know the culprit, I venture to ask if anyone can tell me.—H. V. M.

THE COMING SHOWS.

THE show season commences next week on Tuesday, the 26th, with Boston, followed on Wednesday by a revival of the Alexandra Palace Shows, on Thursday by Brockham and Ryde, and on Saturday, by Eltham, Colchester, and Reigate. These will all possess considerable local interest, but it may be questioned whether the dates will not prove too early for many exhibitors. The first week in July will be a busy one, fourteen shows being fixed for the 1st, for the 3rd, 4th, 5th, 6th, and 7th. On the 4th are five shows, and amongst them Croydon, which is likely to attract more than usual attention this year. Prizes to the value of £175 are offered (not all for Roses), but there is to be a Rose trophy value 25-guineas, "open to all England, amateurs and gentlemen's gardeners only." A photograph of the trophy has been forwarded to us, and it takes the form of a handsome silver cup of simple but elegant design. It is to be held by the winner of the year, and if won twice consecutively it becomes his property. The National Rose Society's Metropolitan Show at the Crystal Palace will, no doubt, be the chief event of the week; to this and the provincial show at Darlington, on July 20th, rosarians will eagerly look forward as representative gatherings.

THE PERSIAN YELLOW ROSE.

Is it not a little surprising that this charming Rose is so comparatively seldom met with in gardens? It is hardy, early, floriferous, and its soft yellow is highly pleasing. I find the flowers most acceptable for bouquets and vases, while for dress adornment they are much prized. For years a large bush of the Persian Yellow has afforded hundreds of blooms, and they are not the less welcome in being among the first Roses of the year. If not cut the bush at present would be like a huge yellow bouquet; this, however, is prevented by the opening buds being gathered every morning. If these were sold for buttonholes the crop would undoubtedly be remunerative. This fine bush is growing in rather poor and somewhat dry soil, and makes short firm wood that requires little pruning, and I suspect mistakes have been made in planting the Persian in rich soil, forcing strong growth, and pruning the same as Hybrid Perpetuals. It is not a Rose for exhibiting, hence its name is not often "seen in the papers," and perhaps that is one reason for its absence from so many gardens.—A. R., *Surrey.*

DIGGING.

A POPULAR writer has the following note in a serial publication on the benefits of digging, which will no doubt interest Mr. Abbey, though it considers the matter from a different standpoint:—

"Of all athletic exercises, with perhaps the single exception of cricket—and it is doubtful if that is an exception—the very best is digging. Probably every single muscle, vein, artery, and nerve in the body is vigorously exercised in the process. There is no constitutional, no aid to digestion, no cure for the blues, no receipt for a good night's sleep, no quietus for excited brain or ruffled nerves, to match half an hour at honest digging once or twice a day. Most of the above evils are born of mental strain, worry, anxiety, monotony of labour, the dreary treadmill exertion of counter or desk, and they fly like bats before the day-dawn, at sight, sound, or touch of gleaming bright spade thrust into the earth. Let the tired and the wearied, the drooping, those almost ready to faint, borrow leave to dig in their neighbours' gardens, if they can neither hire nor purchase one of their own. But meanwhile, let all the fortunate possessors of gardens hasten to do a whole or a part of the digging themselves. It is really the best work in the garden. Not a few owners slave over cleaning, dressing, watering it, and only have a man to do the digging. This is beginning at the wrong end—setting the labourer, in fact, to do the master's work. Custom has reconciled society to this order. But looking at it from a sanitary and business point of view, it is nearly as bad as sending the porter to the bank while the merchant sweeps the office. Good digging is to the garden what the merchant's skill and forethought are to his profits; yet honest digging has almost become the exception; a sort of shambling, shuffling inversion of the soil the rule. And yet, properly understood, and skilfully practised, the former is more easy than the latter. . . . . In the north, where the young gardeners do all the digging and take pride in their work, the art of digging has been elevated almost to the level of a science; and the lad or man who could not change hands at the end of his stitch, and dig equally well with his face to the ground he had dug, from left to right as from right to left, was considered an inferior workman. Hence, no sooner was the end of the brake or stitch reached than the spade was pitched up with a flourish, the left hand placed on the top instead of the right, and the digger faced round and proceeded in the opposite direction. In digging for health, this change of front and of hands is of very great importance. It brings the whole of the muscles of the body into more equal exercise, giving to each side of the frame exactly the same weight to lift and an equality of movement."

VINE ROOTS—HEAT AND MOISTURE.

I SEND with this a root of a Vine from one of the Muscat vineries here which I think rather curious. It attached itself to one of the sockets of the return hot-water pipe that leaks a little. Owing to a mistake in taking the levels it is nearer the border than I intended. When the mulching is put on it is close to the pipe. The root crept up the pier the pipes are resting on and attached itself to the pipe, and you can see how the fibres multiplied. I detached it in January when surface dressing the border, and put it in the canister intending to send it for your inspection, and forgot all about it till I came upon it to-day. The Vine from which the root came is a very strong one with two rods. There is an out and inside border, and by giving attention to watering and mulching the inside border is a mass of roots. The pipes, when the Grapes were finishing, were at times very warm, as I like to finish with a high temperature to insure the golden colour so essential to the Muscat Grape. I planted the Vines thirty-five years ago, and there seems to be no lack of vigour in them yet.—J. CRERAR, *Shabden Park, Redhill.*

[It is a remakable mass of fibres, semicircular in form, 2 inches wide and three-quarters of an inch thick, so dense as to resemble when

cut through a piece of pressed tobacco. Constant moisture with warmth is evidently favourable to the production of surface roots in Vine borders, and that these are beneficial Mr. Crerar's experience affords adequate proof.]

Notes & Gleanings

EVENTS OF THE WEEK.—A meeting of the Royal Horticultural Society's Committees will be held on Tuesday next, the 26th inst., at the Drill Hall, James Street, Victoria Street; and on Wednesday, the 27th inst., the Alexandra Palace Rose Show will be opened, and continued until the following day.

—— A LIST of the FELLOWS OF THE ROYAL HORTICULTURAL SOCIETY, corrected to April 30th, 1888, has just been issued, and contains in thirty-eight pages about 1700 names, but this number has been increased since the date of the list. The names of the Council and officers, honorary, foreign, and corresponding members, are also included.

—— THE INSTITUTE OF FRANCE.—We have great pleasure in announcing the election of Dr. M. T. Masters, Editor of the *Gardener's Chronicle*, as a corresponding member of the Institute of France. Dr. Masters was elected to supply the vacancy caused by the death of Dr. Asa Gray, of Harvard, U.S.A., by thirty-nine votes out of forty-six. We heartily congratulate our friend on the acquirement of this distinguished and well-merited honour.

—— MR. E. MOLYNEUX writes:—"I am very sorry to hear of the death of MR. T. JACKSON. I never knew a kinder man as Secretary of a flower show. He was always pleasant, always the same. I have good reason for knowing this, for going to Kingston five successive years, and arriving there each time early in the morning, after a night's journey, he never failed to give me a welcome and strove to make me comfortable; in fact, it was his manner that helped in no small degree to make my trips there so enjoyable. I much regret his early death."

—— EARLY STRAWBERRIES.—In the Chiswick collection of Strawberries, which is extensive, King of the Earlies (Laxton) was the first to ripen this year in the open ground, the first fruit being picked on the 18th inst., fruit medium sized, excellent flavour, and crop good. Admiral (Laxton) was colouring at the same time, and has larger fruit, something of the Keens' Seedling type, but distinct, and decidedly earlier than that old favourite. Pauline, a much larger fruit, very conical, was also colouring, and will ripen with Black Prince, which, however, shows to great disadvantage by the side of the varieties named, though Pauline does not appear to grow well in the strong Chiswick soil. Laxton's Noble follows closely, a good crop of the most imposing fruit in the collection, and a variety to be grown where Strawberries of noble appearance are coveted.

—— THE REV. J. L. PEACH will be much obliged if any of our readers can give him any advice or information about GARDENING IN CALCUTTA. He desires to know if Carnations can be well grown there, or any of our hardy plants. He has been asked to take some Roses out in October, and would like to know of varieties that would be suitable, and on what stocks they should be established.

—— THE YORK SHOW.—We made arrangements for a special report of this Show, but it has failed to reach us. Whether it has been lost in the post or not, we have not yet ascertained.

—— IN the grounds at Osborne House, Isle of Wight, are two examples of EUCALYPTUS COCCIFERA, which appears to be quite hardy there. One of these trees is 20 feet high, about 10 feet in diameter, well clothed with branches. Its deep blue shade of colour comes out in capital contrast with the light green shrubs making new growths in the background on a slope. It is very desirable for the shrubbery, being much more effective than the Eucalyptus globulus.

—— MESSRS. WEST, NEWMAN & CO., 54, Hatton Garden, London, send us sample sheets of their BOTANICAL DRYING PAPER, stating that "It was formerly called Benthall's. It is made expressly for drying flowers, Ferns, seaweeds, and other specimens for the herbarium. Being very absorbent, and free from acids or alkalis, it perfectly preserves form and colour. It is in use at various public herbaria, and was used by the naturalists on the Arctic ships, and also on the cruise of the 'Challenger.' The extra thick quality has been made in response to a demand for a paper such as is used in the American herbaria. It is more than four times the thickness of the ordinary paper, and is thus easy to handle and extremely durable; it may be used again and again for years." The paper appears to be admirably adapted for the purpose, the large sheets of the thicker quality being well fitted for strong or heavy specimens.

—— HEAVY SNOWSTORM IN CORNWALL.—The *Daily News* of the 14th inst. gave the following paragraph:—A snowstorm in Cornwall in the middle of June is almost unprecedented, but yesterday some parts of the county were visited by a fall of snow and hail which covered the ground for a considerable distance to a depth of about an inch. The morning was beautifully fine and warm, but towards noon heavy clouds covered the sky, and these were followed by pelting showers of rain, accompanied by loud peals of thunder and vivid flashes of lightning. The atmosphere suddenly became bitterly cold as if it were midwinter, and the rain was succeeded by hail and snow, which fell uninterruptedly for more than an hour. In the neighbourhood of Callington the hailstones were so large, and fell with such force, that twigs were cut clean off the trees. Fortunately no hail fell in the fruit-growing districts, and the fruit crops have escaped injury.

—— GARDENERS' ORPHAN FUND.—The following report of the Sectional Committee on the subject indicated was presented at a meeting held on Friday evening last:—"Your Sub-Committee have to report that the fête held in the Flower Market, kindly lent for the occasion by His Grace the Duke of Bedford, and under the patronage of H.R.H. Princess Mary Adelaide, Duchess of Teck, on Wednesday evening, June 6th, proved a brilliant success. It was attended by the Marquis and Marchioness of Tavistock, the President, Sir Julian Goldsmid and Lady Goldsmid, the Right Hon. the Lord Advocate of Scotland, and many other members of the aristocracy, the total number of ladies and gentlemen present being nearly 7000. The Marquis and Marchioness of Tavistock and Sir Julian and Lady Goldsmid expressed themselves highly delighted with the extraordinary display of plants and flowers and the general arrangements. The Marchioness of Tavistock and Lady Goldsmid were pleased to accept handsome bouquets kindly presented for the purpose by Mr. T. A. Dickson of Covent Garden. The press notices, copies of which are submitted, were unanimously of an extremely favourable character. The total expenses of the fête amount to £74 8s. 7d. The amount of money collected in the boxes presided over by twenty-eight young ladies was £127 7s. 10d.; this, with the handsome donation of £100 from His Grace the Duke of Bedford and a few sums received subsequently, make up a total of £237 11s. 4d., leaving a balance of £163 2s. 9d. to the credit of the fund. Your Sub-Committee desire specially to express their hearty thanks to the various officials and growers connected with the Market for their liberal assistance so cheerfully rendered, and recommend that the best thanks of this meeting be accorded to them." Special letters of thanks were directed to be sent to the Duke of Bedford; Mr. J. R. Bourne, His Grace's London Steward; Mr. Assbee, market agent; the several growers and exhibitors of plants; and the ladies who gave their assistance at the fête. The thanks of the General Committee were also unanimously conveyed to Mr. W. Richards, who zealously discharged the duties as Secretary on the occasion.

—— ENGLISH GROWN TOBACCO.—Messrs. Cope Brothers & Co., Liverpool, send us a sample of Tobacco which they guarantee to have prepared from the crop grown by Messrs. James Carter & Co. in Kent. It is the best sample of English Tobacco we have seen, and equal to much that is sold in country villages at 3d. per ounce. It is dark in colour, and in that respect alone might not find favour by town smokers who have choice of the best brands.

—— THE FRUITS OF AFGHANISTAN.—The vegetable productions of Afghanistan are similar to those of India and Europe, with a few, such as Pistacia and edible Pine nuts, Madder and Assafœtida, more peculiar to itself. The Tobacco of Candahar is highly esteemed both in and out of the country. Cotton is grown in small quantities, but in addition to the usual crops suitable to the climate of different parts of the country, large quantities of Apples, Pears, Almonds, Apricots, Quinces, Plums, Cherries, Pomegranates, Limes, Citrons, Grapes, Figs,

and Mulberries are reared to a degree of perfection to which they have attained nowhere else in the East. In their fresh and dried state the Afghan fruits are carried all over Hindostan, and in value exceed the trade in horses and sheep's wool, which form the other considerable portions of the foreign commerce of Afghanistan. In return for their fruits, wool, and horses, the Lohani merchants take back indigo, muslins, chintz, broad-cloths, sugar, spices, medicines, salt, silk, and cotton fabrics, musk, and other British and Indian manufactures and products. But of manufactures proper the Afghans have few or none. They are a nation of warriors and shepherds, not of art-workmen, miners, or handicraftsmen. They make coarse cloth for their own use, turbans, felts, "postins," or sheepskin coats, and camels-hair cloaks, or "chogas," the three latter articles being extensively exported to the Peshawur frontier, and the adjoining portion of the Punjab, where they are valued—especially the postins—by the British Indian army, as a part of their winter clothing.—(*The Countries of the World.*)

—— Weather - Depredations at Midsummer.—Mr. J. H. Goodacre, Elvaston Castle Gardens, Derby, writes:—"Fickle as the English climate is known to be, few would credit the serious damage from frost at this late date, that we often suffer in this locality, as samples of Potato tops, illustrate, herewith enclosed; but the mischief does not end here, as Beans, Marrows, and other tender vegetables were damaged by frost on the 15th of this month, also some kinds of Strawberries, such as British Queen, President, and those erect sorts that throw their bloom above the foliage. Some of the Apples are casting their fruit seriously, the bloom of which I never saw so fine before. Some of the white-flowered sorts were objects of great beauty. I measured some Gravenstein flowers fully 4 inches in diameter, and petals of great substance; the trees resembled massive plants of Fielder's White Azaleas than anything else. Pears, where exposed, are also casting the fruit." The Potato haulm showed unmistakeable signs of injury, and we have heard of similar cases near London.

—— Another winter has proved the value of the Caucasian Laurel. It is much superior to the common variety. In strong retentive soil it retains its colour much better, being a dense dark green, while the common one assumes in some instances during the winter a delicate sickly hue. If pruned somewhat closely for a year or two after the cuttings are struck the Caucasian variety will make a dense bush in a shorter time than the other. This year the Caucasian variety has been covered with flowers, and they brighten otherwise dull spots in the shrubberies early in the season before many other shrubs are in blossom.

—— A liberal schedule of prizes is provided for the summer show of the Richmond (Surrey) Horticultural Society, which will be held in the Old Deer Park, on Wednesday, July 4th. We are reminded that entries close on June 27th. The Secretary is Mr. J. H. Ford, 22, George Street.

—— A coloured illustration of Begonia Lubbersi is given in *Le Moniteur d'Horticulture* of the 10th inst., with an account of the plant by M. Lucien Chauré. The plant was shown at the recent Ghent Quinquennial Show by M. E. Pynaert Van Geert, and it has been described both by M. E. André and M. le Comte Kerchove de Denterghem. The leaves are 2 inches broad at the widest part, tapering, and 5 to 6 inches long, red on the under surface, the upper surface dark green, with numerous silvery spots of irregular shape and size. The flowers are pure white, with two broad rounded petals and two small ones, and it is said they are freely produced. The Begonia was introduced by chance from Brazil to the Brussels Botanic Gardens in 1880 by M. Pedro Bruot of Petropolis, and was observed by M. Lubbers at the base of a Tree Fern stem; it was removed and potted, and flowered for the first time in October 1881. Botanically Begonia Lubbersi is referred to the section Gaertia of Klotzsch, and is related to B. maculata (B. argyrostigma).

—— Gladioli Notes.—Messrs. Stuart & Mein write:—"In reply to Mr. Kelway's inquiry as to where our successes in Gladioli exhibiting took place, we beg to say we were first at the International Show in Edinburgh in 1886 and 1887. In 1869 we took the first prize at Edinburgh, and in the following year at the Crystal Palace, as the following extract from the *Kelso Mail* of September 10th, 1870, will show:—'Crystal Palace Autumn Show.—At this great Exhibition of flowers, held at the Crystal Palace, London, this week, we are glad to observe that Messrs. Stuart & Mein, nursery and seedsmen, Kelso, have carried off the first prize for the best twenty-four spikes of Gladioli against all England. There were fifteen collections exhibited.'"

—— The Royal Botanic Society's Evening Fete will be held on Wednesday, July 4th next, in the Regent's Park Gardens, when an Exhibition of floral decorations, &c., will be provided as usual. The following are the principal classes:—Division 1.—Natural flowers and fruit: Floral decorations arranged for a dinner-table, 10 by 5. In this class no objects are allowed on the tablecloth except such as contain or are accessory to the holding of flowers. Floral decorations, dressed ready for dessert. These tables should be completely dressed for dessert for ten persons. The prizes will be awarded for general effect, without reference to the actual value of the plants and articles employed. Foliage and flowers, suitable for a sideboard; small group of growing plants, suitable for table; group of plants, arranged for the decoration of a recess in a room, for an alcove, or a fireplace; standing basket or vase, furnished with plants suitable for growing in a living-room; hanging basket, of any material, with growing plants; window box of plants. Bridal bouquet; ball-room bouquet. The Judges will be requested to ascertain that the bouquets are firmly made, by removing them from their stands and turning them over; excessive and disproportionate weight, or thickness of handle—*i.e.*, more than 1½ inch across, will be regarded as disqualifying. Glass shades or other covers will not be allowed. Group of flowers, stalks in water, and neither tied nor wired; flowers (either cut or on the plant) which expand only at night; arrangements of flowers and leaves, for personal adornment, such as wreaths, chaplets, and the like, and also for use in dress-trimming and ornament. Miscellaneous—Objects for purposes similar to the above, but not coming strictly into any class. Division 2.—Works of art in any material. —Accuracy of reproduction will be the qualification chiefly considered in these classes. Paintings, drawings, and carvings, of trees, plants, or flowers; groups of artificial flowers and foliage, arranged for the decoration of rooms; groups of artificial flowers and foliage, for table and sideboard; single plants or flowers, for table and sideboard; flowers or foliage for personal adornment. The prizes in division 1 range from £5 to 10s., and in division 2 they may consist of medals, plate, or money at the discretion of the Judges.

—— The Trade in French Vegetables in England.—The British Consul at Brest, in a report on the agriculture of his district, refers to the great eagerness shown by small farmers to find markets for their garden and other produce in this country. From Roscoff alone twenty-six different companies, composed of 406 members, visit a large number of towns along the English, Bristol, and St. George's Channels, the ports on the German Ocean being supplied from Belgium, Normandy, Picardy, and the Artois, and extend their operations from these towns in all directions—those for instance, trading to Newport going sometimes as much as 100 miles inland by rail, returning to Newport every Saturday night. In 1885 the exports of vegetables from Roscoff alone were 11,107 tons Potatoes, 4060 tons Onions, 4000 tons Cauliflowers, and 1800 tons Artichokes. Of Cauliflowers the northern part of Finistère furnishes the Western Railway Company with a million tons per annum, while large quantities are sent by steamer from Morlaix. Three hundred tons of Cabbages, several thousand tons of winter and summer red Onions, and enormous quantities of preserved Peas, Kidney Beans, and Shallots were exported from Morlaix last year to this country. The same port alone also sends seven million eggs, worth £16,000, and, owing to the establishment of a line of steamers to Bristol, this number is increasing rapidly.

—— The Wakefield Paxton Society.—Mr. T. R. Preston of St. John's Nursery was announced to read a paper before the members on the 21st of April, but owing to his indisposition the fixture was altered to the present month. In the meantime Mr. Preston had almost recovered from a severe illness, and had prepared an exceedingly useful and interesting paper on "Plants Suitable for Entrance Hall and Room Decoration." The essayist's practical experience, combined with his evident good taste, enabled him to convey to his hearers many valuable hints on grouping for effect, and the general management of plants during the time they are subjected to the extreme and varied unnatural conditions surrounding them when used for decorative purposes within doors. The paper was attentively listened to, and the essayist, who had evidently prepared it with great care, was warmly

applauded. Mr. Carbert, schoolmaster, Sandal, proposed a vote of thanks to Mr. Preston for his paper, and in doing so he referred to the essay in complimentary terms, and also expressed himself as a lover of plants and flowers. Councillor Howden, one of the Vice-Presidents, in seconding the motion remarked that it would be well if ladies could attend and hear such papers as Mr. Preston had read, because they would by that means acquire information which would enable them to keep plants in dwellings in bloom and in good condition for a much longer period than is often the case at present. Mr. George Gill of Eastmoor, and the President, supported the motion, which was heartily carried and suitably acknowledged by Mr. Preston, who was congratulated on his restoration to health and return to the gatherings of the Society. Councillor Mills presided, and Mr. Brown occupied the vice-chair.

—— The schedule of the National Chrysanthemum Society's Provincial Show at Sheffield, to be held in conjunction with the Sheffield and West Riding Society, augmented by the Sheffield and Hallamshire Gardeners' Society, in the Corn Exchange, November 16th and 17th is to hand. We have already referred to the principal open classes which are included in the National Society's schedule, but the local and amateur classes have been extended to provide for the exhibitors from the Sheffield and Hallamshire Society. The Hon. Secs. are Messrs. W. K. Woodcock, J. W. Jarvis, and J. W. Needham for the former, with Mr. W. Marshall for the latter Society.

—— An interesting account of a visit to Devon Rose Nursery, that of Messrs. Curtis, Sanford & Co., at Torquay, is given in the *Torquay Times* of the 15th inst. It is stated there are between thirty and forty acres under cultivation, 60,000 stocks being planted for budding every year, and the glass houses extend to about 2000 feet run. It is incidentally mentioned that a specimen of Berberis Darwini growing in the nursery is 20 feet high and 60 feet in circumference, and is considered the largest in England, having been planted thirty years ago by Mr. Curtis.

—— The schedule of the Alexandra Palace Rose Show is issued, and enumerates eighteen classes, four for nurserymen, four for amateurs and gentlemen's gardeners, eight open classes, one for Roses in pots, and a class for miscellaneous exhibits. The prizes range from £5 as the premier awards in the nurserymen's and amateurs' classes for forty-eight and thirty-six Roses respectively, to 7s. 6d. as the third prize in several open classes. Special prizes are offered by Messrs. Wood and Sons, Wood Green, and Mr. W. Colchester, Ipswich. As previously stated, the Show will be held on June 27th and 28th, Mr. R. Beale being the Secretary.

—— We are requested to direct attention to Jeyes' Sanitary Compounds. The article known as Jeyes' Sheep Dip, if used as a dressing for Wheat and seeds, is said to protect them against birds, while "a dilute solution of Jeyes' Perfect Purifier, when sprinkled or syringed upon the leaves, stems, flowers and fruit of plants, refreshes them and destroys insect pests."

—— The monthly meeting of the Belgian Horticulturists was held in Ghent on the 11th inst., when the following members were present:—MM. A. Peeters, Moens, V. Cuvelier, Metdepenningen, Alf. Van Imschoot, Al. Dalliere, G. Von Eeckhaute, Laurent Masureel, C. Spae, A. Wallem and Jules Closon, M. Jules Hye-Leysen presiding, and M. J. Boelens acting as Secretary. Certificates of merit were awarded for Dracænas Desmetiana and Comtesse de Kerchove from M. Desmet Duvivier; for Nidularium argenteum striatum and Lomaria platyptera from M. Aug. Van Geert; for Cattleyas Reineckiana and Mossiæ alba with a species of Lælia from M. James Bray; for Cypripedium Mastersianum from M. A. Peeters; for Cattleya Schrœderi and Cypripedium Boxalli atratum superbum from M. Jules Hye-Leysen; for Cypripedium Godefroyæ bellatulum and Anthurium Andreanum Mad. Ed. Pynaert from MM. Jacob Makoy et Cie; for Thuia Lobbi aurea from M. Alex. Dallière; for Odontoglossum crispum and Cattleya Mossiæ De Puydt from MM. Vervaet et Cie. Cultural certificates and honourable mention were also accorded to several Orchids.

RHODODENDRONS AT HIGH BEECH.

The High Beech Nursery is perhaps best known to the horticultural world as the home of Messrs. Paul & Son's Tea Roses. But though an enormous space is devoted to these delicate flowers, the nursery is justly famed for its Hollies, Conifers, and Rhododendrons, to say nothing of the bog garden recently formed by Mr. G. Paul, and which has been a source of great interest to lovers of this class of plants. But it is in connection with a visit on the 7th of June, paid for the purpose of seeing the Rhododendrons in their full beauty, that I wish to write a few notes. Seedlings are raised in thousands behind the Yew and Beech hedges, chiefly for grafting stocks, but the propagation is not done there, both stocks and scions being taken to Cheshunt, afterwards returning again till they are disposed of. The plants are seen in all stages, some only a foot high, while many of the standards are 8 or 9 feet high and 5 or 6 feet through, all bearing enormous masses of brilliant flowers. I always think the merits of a variety are best seen when grown in a mass, the habit is marked, as well as their floriferousness. The soil at High Beech appears to suit them; it is a light peaty loam deeply dug, in which the plants seem to revel. Some of the early varieties were over, such as Hendersoni and the new Mrs. C. Butler, but enough was to be seen to judge it an acquisition. I have only taken the names of the most striking. Many of the varieties are old and well tried, but some of the newer ones are good both in habit and flower.

Everestianum, purplish lilac, carrying enormous trusses; Lord John Russell, rosy mauve, beautifully spotted; Evelyn, large white, with fine foliage; H. W. Sargeant, crimson, one of the best; The Queen, pure white, very distinct, with good habit; Lady Emily Peel, bright pink, neatly spotted; Baroness Rothschild, red, fine truss; Mrs. John Clutton, good white; Beauty of Cheshunt, good pink, upper petals densely spotted; Broughtoni, bright rose; The Princess, beautiful white, with brown spots; Princess Mary of Cambridge, rosy purple; Madame Van de Weyer, fine crimson; Mrs. Fitzgerald, very bright crimson; Rosabel, deep blush; Michael Waterer, brilliant crimson; Marguerite, blush, with large trusses; Frederick Waterer, bright crimson; J. Marshall Brooks, scarlet, very distinct; Mrs. Shuttleworth, bright scarlet, spotted; Sigismund Rucker, magenta, heavily spotted; Mrs. Heneage, purple; Mrs. F. Hankey, salmon, pretty; and Old Port, fine large purple.—James B. Riding.

MUSHROOMS AND THEIR CULTURE.

This singular production at times baffles the skill of the most careful cultivator, whilst at other times it yields a large return to the roughest or most unexpected position that was ever tried for their artificial growth. It therefore becomes difficult to lay down definite rules whereby a certain supply can be obtained at all times. At certain seasons, say the autumn months, beds carefully made up are almost sure to bear, because at that season they are produced naturally out of doors; later on, however, the chances diminish; not but that equally good crops are obtained occasionally in February as in October, but the same treatment will not secure them at that time with a like certainty. All we can do in the way of reproducing the plant is by the mode common to many other plants—a fibrous root running through the ground sends up its produce singly, or in clusters, all around the origin of the spot from which the ramification took place. This fibrous substance, technically called spawn, is produced naturally in great abundance in some seasons and in certain places; at other times it is found in dung-heaps which have lain long enough to allow it to properly fix itself, and many good crops of Mushrooms are the result, not the less worthy of attention by coming unexpectedly. These matters, however, all tend to the conclusion that the propagation and culture of Mushrooms differ essentially from most other plants we are in the habit of bestowing much care on, and that, after all, disappointments now and then occur with the most experienced in such matters; but a little examination into the principles which govern their growth out of doors may assist us much in regulating our treatment of those we endeavour to grow artificially.

To make a bed with a view to ensure a crop, procure some good horse-droppings that have not been heated, some sheep-dung, if at hand, that has not lain long on the ground for the rain to wash away its richness. Let these be well mixed, and if there be any great quantity of it, let it be turned every day for a little time; then every two days, as the heat may seem to be, and when it gets so far moderated as to give tokens of sweetness and steadiness, the bed may be made, which, if inside some building where a little fire heat can be given, need not be more than 18 inches thick, and as long and wide as required; but if the place be open, and not any means of warming it, a greater thickness of bed, with a more careful preparation of materials, so as to ensure against their overheating, must be resorted to, supposing that a place on purpose is to be had, with shelves in the usual way. I would, in making up the beds, throw in pieces of half-decayed turf, and also pieces of spawn; this is on the supposition that the latter is plentiful, which it ought to be. A good beating or treading is necessary, and, last of all, a good coating of fresh maiden loam, preferably from a pasture where Mushrooms are known to grow naturally; this coating, however, had better be delayed a few days, until there be no danger of the bed overheating; at the same time, it must heat a little. Watering should not be done except for keeping the surface moist until the Mushrooms appear, when they may have a little; but if the bed seems to do well at first, it would be better to avoid heavy waterings until the bed begins to go off, or partially cease, when a heavy watering will sometimes revive it again, and another good crop will be the issue, with an extended season of bearing.

Where no shed nor outhouse exists in which to make up a Mushroom bed, and there is plenty of good horse dung to be had, a very

good bed may sometimes be made against a blank wall after the dung is sufficiently sweetened, a bed about 4 feet wide, well trodden down, and built something like a steep-pitched lean-to roof will be ; but, in fact, very short dung cannot well be built up perpendicularly, neither would it be so well, for this lying against the wall presents a diagonal surface, which can easily be covered up to any extent. Spawning, covering with earth, &c., may be done the same as recommended above, and a deep coating of straw or litter will be all that is wanted, examining it from time to time to see that the heat does not decrease, and that the spawn does not expend itself uselessly in running into the litter, which it will sometimes do, to the injury of the crop. Very often a good crop is obtained in this way, the more liberal supply of dung making up in a great measure for the want of shelter. Even the wall itself may be dispensed with.

I have had as good a crop of Mushrooms on a bed out of doors as I ever had in a house. The bed was made as above, only, instead of being a "lean-to," it was a "span," the dung being built up into a steep ridge-like shape, and well beaten, &c. A good heavy covering is the principal thing, and if the dung be in a good well-tempered condition in October, when the bed is made, it is not likely to lose heat until the Mushrooms are formed and a crop secured. A cellar is also not a bad place for a bed ; and we all know that Mushrooms are now and then found in very singular places. I have seen some that were produced in a coal mine 400 feet deep. But, as winter is a time when most structures are in use, I would advise the amateur who has no accommodation that way to try the effects of a bed quite out of doors, as above. This he can do at little expense if he be living in a town where dung is plentiful. The result is likely to be encouraging, and very often the Mushrooms so produced are better in quality than others more assisted by artificial means.—R. J. K.

STYRAX OBASSIA.

A HANDSOME Japanese tree of moderate size bearing the above name has been growing in Messrs. J. Veitch & Sons' nursery at Coombe Wood for ten years, and has often attracted attention by its ample foliage. This season it has flowered freely, and specimens sent to the meeting of the Royal Horticultural Society on the 12th inst. were at once certificated when placed before the Floral Committee. Additions to our lists of flowering trees are not too frequent, and it renders any of sterling merit like this Styrax all the more acceptable. It cannot be claimed as a novelty in the strict sense of the term, as it was described and figured in the "Flora Japonica" by Siebold and Zuccarini in 1835, but it is known to few except botanists and those who have made a special study of trees and shrubs. It is said to be a native of the province Senano in the Island of Nippon.



FIG. 73.—STYRAX OBASSIA.

The leaves when of full size on the tree at Coombe Wood are 8 to 10 inches in diameter, nearly round in outline, frequently irregularly and deeply serrated at the apical margin, of a light soft green, much like the Catalpa. The tree is bushy in habit, producing its pure white flowers in racemes 6 to 8 inches long, the petals somewhat narrow and pointed, as shown in the illustration (fig. 73). The leaves depicted there, however, are those found at the base of the racemes on the flowering branches, and are not nearly so large as the mature leaves lower down the branches. It has proved quite hardy at Coombe, where it stands on a slope moderately sheltered by hedges.



ODONTOGLOSSUM VEXILLARIUM.

At The Woodlands, Streatham, Mr. R. H. Measures has a grand display of Odontoglossum vexillarium in many varieties, all beautiful, and some of exceptional merit. The plants are in capital condition, and are arranged on a long wide stage to form a bank, between 500 and 600 racemes of large flowers being now expanded. A few plants of the bright orange scarlet Epidendrum are introduced amongst the Odontoglossums, which add greatly to the beauty of the group in contrast with the delicate tints prevailing in the latter. One vigorous plant of a good variety with three growths has fifteen racemes, or five to each growth. Another has nine racemes of sixty-seven flowers, a charming specimen, and several could be pointed out only slightly inferior to this in numbers. A variety named pulchellum has large well shaped flowers, white with a yellow base and a few crimson veins. Cobbianum is also pretty, though small, the sepals and petals rosy crimson, the lip pure white with a yellow base, but a variety with pure white flowers only faintly fringed at the base with yellow is one of the most notable, and the shape is excellent. The day temperature, both night and day, has been kept between 55° and 60°, and frequently it has not varied more than 2° or 3° in the twenty-four hours. An even temperature and absolute cleanliness are the two means relied upon for maintaining the health of the plants. One point Mr. Measures remarks this year, and that is the much paler colour of varieties bought in flower for their high colour, and he has observed what others have also noted—namely, that these and other Orchids often vary considerably under cultivation both in colour and size of flowers. Some advocate growing Odontoglossum vexillarium in a higher temperature to induce the perfection of colouring, but this is scarcely what is found to rule in other cases.

CATTLEYA BLUNTI.

Some Orchids have been overpraised by the discoverers and vendors, but this is certainly not one of them, for when seen as it has been at The Woodlands, it is enough to make anyone an Orchid admirer. The strong plant there grown has had three flowers, one of which is now before me, and amply deserves a few words of description, for most of the books dismiss it rather summarily. Mr. Williams, however, does it partial justice in his "Manual." It is distinctly of the C. Mendeli type, though it has been given almost specific rank by some, and with quite as good reason as many others. The sepals are spreading, nearly an inch in diameter at the widest part, tapering to base and point, the latter being slightly recurved, and are 3 inches long. They are white, with a faint scarcely perceptible blush tinge in the later stages, and spread equally from the base of the lip. The petals are the same length as the sepals, but 2 inches broad at the widest part towards the base, tapering gradually to an obtuse point, the upper margin being neatly undulated or frilled. They are pure white, and stand up from the sepals at a considerable angle like two beautiful wings half expanded. The lip is exquisitely formed; the expanded portion is oblong in outline, 2 inches by 1¾ broad, very evenly and beautifully frilled, which reduces the breadth in appearance and gives the oblong form; with the tube it is pure white, relieved only by a faint dash of clear yellow in the throat and a few pale crimson veins quite at the base. It is now ranked in some works as Blunt's variety of C. Mendeli, and first flowered in the late Mr. Day's collection at Tottenham, having been introduced by the collector, Mr. H. Blunt, from Colombia.—C.

VENTILATING.

There is scarcely any subject connected with practical gardening which has received so little attention as this—one of the most important proceedings. This seems extraordinary. Is it that the thing is in its nature or character mysterious and indefinite, or that it cannot be reduced to anything like system? Certainly, it will not be expected that we can in such a case lay down cut-and-dry rules and state the amount and character of the ventilation to be pursued on any given day. This is impossible, inasmuch as our climate, although mainly divisible into four somewhat distinct seasons, yet is liable to amazing vicissitudes in most of them; and, of course, modes of ventilation must be modified accordingly. I may here, at the outset, state the objects of ventilation. They are mainly two—the escape of accumulated heat, and the correction of a vitiated atmosphere by a circulation of pure air. But the way in which these two objects are carried out are various, and dependent entirely on circumstances. Those who will consider the matter fairly should first of all look into the science of pneumatics, and ascertain the characters belonging to what is called the air—its relative gravity, modes of interchange, &c. One broad fact may be here named as a prelude to succeeding explanations—that the admission of air in severe winter weather is a procedure requiring much more caution than at other periods; the frosty breeze is of insidious character, and this, too, enhanced in proportion to the discrepancy between the respective temperatures of the inside and outside. Most readers must be aware of this latter fact by observing the effect of draught through crannies, when perhaps the Yule log is blazing, and the air outside a keen north-easter, of some 20° of frost. What could there be but a rapid interchange; the room within at a temperature of 60° to 70°? Here we have a discrepancy of some 50°, or nearly so. Well may the good folks inside complain that they cannot keep their feet warm. I may here, in returning to our garden structures, state the consequences which generally ensue from a neglect of ventilation. They are as follows:—The plants draw, or become weak and long jointed; a corrupt atmosphere gives an unhealthy colour to the foliage; stagnated damps are engendered in parts of the structure, frequently giving birth to Mosses, and other cryptogamic productions; the flowers are paler, and lose a proportion of their aroma; an indisposition to produce blossom is generally a concomitant; insects of all kinds increase more rapidly; and fruits are deficient in flavour. These are the evils which may be expected to ensue from bad ventilation: of course they do not all happen on every occasion, but receive their being and character according to the aggravation of those circumstances which engender them. In looking over the principles of ventilation we may at once see that in endeavouring to teach the uninformed it is necessary to adopt some division of the subject. This is not a very simple task, but since I have travelled thus far I must endeavour to do so to the best of my abilities.

First, then, I may observe that there are general principles of ventilation common to nearly all seasons, and next that there are many special cases which form an exception, either in mode or degree, or both. The special cases to which I allude consist mostly of singular tribes or families of plants, such as Orchids, Ferns, &c. But certain other families, which for the most part submit to the most ordinary treatment, have periods when a departure from the ordinary routine is of much benefit. Thus the Camellia: at this time my Camellia house is almost constantly shaded; but this is not the general practice. It is also kept very damp. But these would be serious conditions when the plants were in blossom through the winter. The house is scarcely ventilated at all whilst they are making their young growth; this, too, would not be the case at other periods. But these are only a few solitary cases—enough, however, to show to those unpractised in gardening affairs that mere set rules, founded on the practice of someone, and devoid of principle, is not the kind of armour that a modern gardener must depend on. Apart from tribes or families of ornamental plants we must look into the early forcing house, the warm pit, the old-fashioned hotbed. Then we may pass on to the cold pit or hibernatory, and cold frames.

Thorough ventilation consists in admitting a complete circulation, both by means of the escape of heated or contaminated air at the highest point, and a consequent influx of fresh air from the lowest level; but this has to be performed with a due regard to the wind, its violence and its characters. Lively currents of mild winds are, in the main, beneficial, although they may slightly agitate the vegetation in the interior; but when such are chilling to the human body they must be avoided. In managing this matter a due regard must be paid to the proportion the front air bears to that of the back. The greater the egress at the back or apex of the houses the greater will, of course, be the demand for fresh air from the front, and *vice versa*. In vineries or Peach houses it is very frequently necessary in summer to open as wide as possible both front and back ventilators, or the inmates become scorched, and on most occasions it is better to starve than to burn if a risk must be run. Nothing looks worse in vineries than to see singed foliage; it is not only a disfigurement to the Vines, but a most serious injury to their permanent welfare. In what is termed "catching" or fluctuating weather, the ventilation requires much attention, and to be attended to several times within half-a-dozen hours. In such cases there is frequently neglect—the parties, perhaps, have too many irons in the fire, and some burn. Hailstorms must be studiously guarded against; these sometimes occasion much mischief in a few minutes. They generally fall perpendicularly, or, at least, they seldom do much harm through the front sashes; on such occasions, then, and with alternations of bright sunshine—for bright indeed it generally is at such periods—the front ventila-

tion must be proportionately more liberal, and every attention given. This practice, however, refers more to summer management than to winter: the months of April, May, and June are more concerned than, perhaps, any others. In all cases the chief point is to know the character of climate and amount of temperature the plants or trees require, and that, too, with regard to their condition and the period. This kind of knowledge is not speedily acquired certainly, and I lament that I cannot impart it in a few words. The following may be taken as maxims generally correct:—A very copious admission of front air, and little at back or the apex, has a tendency to create a great disparity between the temperature at back and front, and to chill the frontage. Much back air and little front is likely to encourage a keen draught. When cutting winds or a very sharp air therefore prevail, it is frequently good policy to give no front air unless compelled. But there are no maxims which bear continual sway: as conditions change we must change our policy also.

In early forcing, such as Vines, &c., perhaps more caution is needed than in most things, particularly during the months of January and February, for then the sun has little power; but when the forcing gets into March he finds the case much altered, and this is generally his most trying time. With a bright sunshine and a cutting south-easter he is sometimes at his wits' end to keep things right. By-the-by, of all the winds that blow perhaps a south-eastern is the worst for glazed structures, especially lean-to houses. They are every moment robbing the roof of its warmth, and the roof borrowing from the interior. As for giving air, especially front air, extreme caution is frequently requisite, and when absolutely necessary in such circumstances, it would be well if we could have some finely pierced apparatus to riddle it into the house. We all know how the very early Cucumber forcer—in dung beds—occasionally takes the precaution of nailing a mat or canvas over the air-giving points in order to break the fierce action of the air, and, as it were, to riddle it through. As for the ordinary greenhouse, that is the easiest to ventilate of most structures, and I need not say much on that head.

Ventilation is frequently had recourse to as a preventive of drip, and very necessary too. I have a Camellia house which is notorious for drip, the house having been glazed some years since. I have Camellias in constant blossom from the early part of November until May, and we rarely have one blemished by drip. This is owing to the constant maintenance of air day and night, both at a high or a low level; and the constant use of very moderate firing, by which the hot-water pipes are always lukewarm. This induces a lively circulation of air, which dissipates the vapours before they can become condensed. One excellent adjunct in the prevention of drip would be a roof covering to prevent condensation, but such are very perishable and difficult to work during the alternations of frost and thaw. The prevention of drip, as to blossoming plants in winter and early spring, is a most important affair; and in conjunction with the pains taken over ventilation and firing much discretion should be exercised in the application of water, doing so sparingly and principally in the morning early.

There can be no doubt that long-confined and, by consequence, stagnant air is highly prejudicial to vegetation in general, especially to those plants with thin foliage and of speedy growth. There is every reason to believe in an analogy between animals and plants in this respect. Foul or stagnant air long continued casts a skin over the foliage of plants, and this, by partially closing their "breathing pores," of course vitiates their juices, or impedes reciprocity between the foliage and the root, which is of great importance. And how can we expect plants or trees to blossom in full vigour, with all their parts perfect, without that subtile, yet invigorating element—pure air? As to insects, fungi, &c., if you want any for special purposes, you will only waste your time by hunting hothouses where judicious ventilation is maintained, and where, by a cleanly system, all corruption or irritation is met half way. The drawing of plants or trees, alias weakening, alias elongation of the joints, with some other aliases, is, of course, clearly traceable to a want of free circulation, as also to too much closely confined damp-producing attenuation, and a scant of the colouring deposit in the leaves of plants, called chlorophyll. Let me here, too, warn the uninformed of that affair called excitability or a disposition to receive damage on any extreme of atmospheric conditions. The longer garden structures are kept badly ventilated the more this kind of tenderness increases. The colours of flowers, too, and the flavour of fruits are very incomplete without free ventilation.

Before concluding my explanations I must beg to offer an opinion that if all hothouses were properly constructed and properly heated, together with that full amount of provision for air moisture, which would, when necessary, prove equal to any demand, there is scarcely anything we cultivate but would be better for air-giving night and day. This I have certainly never seen realised, and never had it in my power to carry out; but it is an old conviction, and I am by no means solitary in the opinion. Indeed, when it is considered that everything we cultivate in houses not only endures but enjoys such conditions in their wild state, how is it possible to doubt it? The great obstacle, it would appear, to a full recognition of this fact is the dread of over-dry indoor atmosphere, through the constant loss of vapour; but surely we have means in these times of producing as constant a supply. One thing may here be observed: that in severe weather, or when there is a certain amount of discrepancy between the inside and outside air, and air moisture continues to be engendered within, it is very apt to descend in drip, a thing by all means to be avoided. Now with a constant ventilation there is no need to fear this drip. Of course, such would consume a little more fuel, but this amount would not be found very material.

It is only proper, however, to remark here that, although constant ventilation might be congenial to the inmates of our houses in general, yet there are many special objects in gardening which demand other considerations. The early forcer, endeavouring to produce his Grapes, Pines, Peaches, &c., for sale or for exhibition, has frequently to push them forward by all possible means, and such circumstances require that a great amount of sun heat be enclosed betimes in the afternoon, and a high and moist atmosphere preserved during the earlier part of the night. I have here to confess that constant ventilation would frequently cause the loss of a week or two, and this is, in many cases, a serious affair as concerns market prices or exhibition days. Early Cucumbers seem particularly to enjoy this close shutting up; it of course hurries them forward. At the same time we all know that Cucumbers succeed in the very highest degree in warm summers, and under proper circumstances, albeit they are subject to winds, storms, and other vicissitudes.—N. E. R.

GLENSTAL CASTLE GARDENS AND THE RHODODENDRONS.

One of the most remarkable floral sights of Ireland is afforded by the outdoor Rhododendrons at Glenstal Castle, the residence of Sir Croker Barrington, Bart., imposingly situated on the southern slope of the Slieve Felim Hills. The Castle is comparatively modern, being principally built in the last generation by the late Sir Mathew, of a handsome variety of darkly marbled each stone found on the estate, and to which quarry, some three miles distant, a railroad was run. Though seemingly a freestone, time has written no wrinkles on its bold towers, turrets, or parapets. The top of the Sir Matthew tower is reached by a winding spiral stairway, and from its summit colonnade on a bright sunny day, such as we were fortunate in having, a lovely landscape greeted the eye in every direction. Limerick was due west, some dozen miles; the Shannon sweeps around through many scenic splendours to Castleconnell, less than half the distance, with its fishing, archaic, and historic attractions; while stretching away to the east and south, dotted here and there with cosy residences and gardens hidden in groves and dells, is the great plain of Limerick, terminating in one direction with the Golden Vale and great summit of Gattymore; while the rugged outlines of the Silvermine Mountain close out the north and east. The sparkling sheen of the lake below, with its swans and wild fowl, and the competition for a favourite piece of ground between two battalions of fallow and red deer, attract the wandering delighted eye to the park spread out and undulating below. From this vantage point a varied bird's eye view is obtained of many things of the forest—stately Oaks, venerable Elms, and spreading Chestnuts; while closely competing with those in height were many Araucaria imbricata. Except at Woodstock, the present fine residence of Lady Louisa Tighe, I have seen no finer specimens of Chili Pines than here. They are healthy, and seem about 70 feet high. The eye catches in the immediate park landscape many curious, and by no means common, specimens of various coloured Lilacs, Philadelphus, and double Deutzias; Gymnocladus canadense; and, sheltered by a wall, Magnolia acuminata, that the winter seemed to affect badly. Just underneath the terrace garden are miniature Heights of Alma, constructed in memory of that celebrated battle siege where so many Irish and Britons bravely lost their lives. The top rampart was planted with Hypericum calycinum, the second with Fuchsia Riccartoni, and underneath Halesia tetraptera. Though well protected from north and east, the winter of 1879 and 1880 was too much for them, and they were killed, leaving the "Heights of Alma" as bare as probably the Russian had their great prototype more than a quarter of a century since. With just a peep here and there at the many remarkable Coniferæ, I propose to no longer pretend not to see the Rhododendrons. They meet the gaze at the entrance to the park; they stud the margin and islands of the lake; they front copses and skirt glades, peep out from gloomy ravines, and seem equally at home 1000 feet above yonder hill escarpment. But we shall ramble among them immediately. To see the Coniferæ and Rhododendrons to advantage we must quit, reluctantly it must be, our perch with the coloured sentinel on guard in the Castle turret, and leave him to gaze admiringly on the Russian captured cannons below, and on as smiling a

landscape as the scene painter's eye ever gazed on. The tourist may search many a league of the wide world before coming on so enchanting a scene :—

"The eye can rest, suppose the soul to smile,
On thy dear diversity—Emerald Isle!"

We are kindly permitted, after our descent from cloudland—this time sunshine—to have a look through the library, various drawing rooms, picture and statuary galleries; the spoils of the chase; the family portraits, as well as the coats of mail of the Middle Ages of Sir Croker Barrington's ancestors that would fill a quarto volume to briefly describe. Two things particularly struck our party, and that I cannot describe fully, but yet cannot pass, the mediæval Flemish and Irish tapestry, and a modern balustrade carving in Irish oak by the boys of a local industrial institution from a design by a clergyman assisted by some members of Sir Croker's family that stands on the lobby of the grand Castle stairway. We cannot emerge from the courtyard without a greeting from "Gelert," the giant specimen of the Irish wolf dog or staghound that I have often seen pictured and read of in history, but never saw a live specimen before. He seemed, like Sir Croker's retainers, disposed to keep up the ancient custom of his now all but extinct species, and to give us a warm Irish welcome. Right in front is the bridge crossing the glen, where we pass a large specimen of Rhododendron Nobleanum, and to which I shall have to refer again. This bridge leads to the glass structures and the terraced gardens, but Mr. R. Weller, the experienced and courteous head gardener here, who acts as chaperone with Mr. McMahon, gardener to the Dowager Lady Barrington, and Mr. Morris, estate manager, decide that Mr. Crehan, Minella Gardens, and myself, must first see this wonderful wooded glen, more than two miles long, and through which a subterranean stream flows. This stream, after winding its way tortuously for some miles through the Ferns and Hazels, with an occasional glimpse of the sunlight from above and through the foliage of the tall trees, dips under ground and again comes to the surface a mile further down, near the aforementioned bridge, and below it widens into a miniature lake. The Ferns here attain an almost giant size, and are of many varieties. Recently, up in a cleft, between great boulders, Mr. Weller recently discovered a piece of Killarney Fern (Trichomanes radicans), the only piece I ever saw or heard of as naturally growing and thriving outside its native habitat. From its position neither the plant nor spores could have been placed there. Convenient were fine specimens of the Weymouth Pine (Pinus Strobus), P. austriaca, and P. Lambertiana, and on a southern slope, occasionally alternating with Cedars, Abies Morinda and A. Nordmanniana. Mr. Morris considers this last the "best timber tree of all the Silver Firs," and around here it suits in all positions, high or low. We were, however, not prepared to meet one in this highland retreat called A. Albertiana, extremely handsome in foliage, and in habit resembling the Cedar of Lebanon. Cupressus is represented by C. Lawsoniana, and the largest and seemingly the oldest, C. macrocarpa, I noticed elsewhere, with the exceptions of Powerscourt and Doneraile Court, Wicklow and Cork. There are many rare and curious trees, shrubs, and ornamental plants meeting the visitor at almost every turn that would claim attention were your space no consideration; or the special train passing Boher—the nearest railway station—twenty-four hours later. We may, however, here notice what Sir William Hooker is said to have considered the oldest specimen of English Yew (Taxus baccata) in the world. It is of immense size in the trunk, one-half of which is dead, and planted beside the steps of the old terraced gardens, which Sir Croker and his ancestors maintain as arranged some centuries since, and before the present Castle was erected. The age is set down at 450 years, but Mr. W. Baylor Hartland of Cork, I understand, thinks it nearer twice those figures.

Coming to the immediate object of our visit—the Rhododendrons—though I feel with such surroundings on a glorious sunny day in leafy June, I need hardly apologise for digressing before specially noting the Glenstal specialty. And first I am tempted to ask you and your readers, Why are not hardy Rhododendrons more extensively planted? The number of varieties to select from are little short of 400. Thousands were planted here, and flowers can be seen nearly every day in the year. The majority of them are almost as cheap as common shrubs, while their evergreen foliage and floral beauty preclude comparison with most shrubs. There they seem to luxuriate in swamps or marshy retreats with the same apparent indifference as they do on the exposed hillside, beside the carriage drives, or in the partial twilight of the deep glens. Their adaptability and beauty are not their only commendations. Here, besides deer and the usual park game, hares and rabbits are found by the million. It is found in severe weather Rhododendrons are almost the only ornamental shrubs they never nibble or destroy. The common R. ponticum and the, if possible hardier, R. catawbiense, are found everywhere. There are ten miles of walks, and at no time do you lose sight of them. The customary method is to have those that contrast in colour and that are known to suit best the particular situations planted in juxtaposition. For instance, near the entrance lodge was noticeable Sir Charles Napier, rose; Nobleanum, shades of crimson; Curricanum, dark purple; Album triumphans, large white; Concessum, light centre shading to rose; Victoria, claret; Narcissus, dark spots on scarlet ground; Speculatum, pink; Purity, white; John Waterer, rich carmine; Pictum, orange spots on white ground; and Sidney Herbert, dark spots on dark crimson, and duplicates of the same in different positions generally alternating for contrast. As we had not time to see more than a fraction of the park and grounds and a portion of the numerous clumps, I cannot pretend to note more than a few of the leading varieties, many of them being planted by the thousand. A clump to the right of the main carriage drive contained fifty distinct varieties alone, conspicuous being some of the foregoing, with roseum superbum, oculatum nigrum, perspicuum, William Ewart Gladstone, Stella, Lady Dorothy Nevill, John Spencer, Mirandum, Dictator, Isabel, Faust, delicatissimum, Neilsoni, Scipio, Poussin, Raphael, limbatum, Michael Waterer, and many others that did not seem strikingly different. The object seemingly aimed at was not in conspicuous positions to have any two similar varieties planted beside, and to have low-growing ones planted in front—all indicating an intimate acquaintance with the special characteristics—and gradually sloping from the grassy lawn upwards.

Another object aimed at seemed to be to have hardy early-flowering Azaleas interspersed here, so that the various masses should be attractive for the longest period. Where seeding is not desired in case of the best varieties it adds much to the vigour of the growth, and makes more certain the flowering the following year, to pick off the seed pods. Rhododendrons are a special attraction here from November to July. For instance, I forward a photo of R. Nobleanum taken by Lord Rosse the 17th of January. It being a snowy dull day this was difficult, and prevents the contour and blooms from being more defined.

Passing hurriedly to the gardens proper, I am afraid the exigency of your space will permit little more than a mere reference. The terrace garden, flanked by Russian cannon, commands a splendid view, and has in perfection the much-coveted springy moss-like carpet of turf closely shaven. The fountain garden, with its large herbaceous collections of alpines and perennials, all seemingly at home, was very attractive to me. Gunnera scabra, Foxgloves, Japanese, German, Spanish, English, and many rare Irises, had each allotments. So had Pyrethrums, single and double; Alstrœmeria, Hemerocallis, Delphiniums, Doronicum Clusi, various Papavers, Bocconia cordata, Violas, Mimulus, Pæonies, Potentillas, Geums, Phloxes, Campanulas, &c.

The glass structures include a well stocked greenhouse, that a glance shows many rare and good things well grown. We have never seen Regal, Fancy, and French (spotted) Pelargoniums cleaner and more floriferous. The roof is covered on one side with Maréchal Niel, Nipbetos, and Souvenir d'un Ami Roses; on the opposite, span-roof, the red and white Lapagerias. To the pillars are trained the old and seldom seen Fuchsia corymbiflora, Tecoma rosæfolia, a rare beauty, and Dracæna indivisa. A corner contained a large number of cool-house Orchids, very promising, with Gloxinias, Coleus, Bouvardias, and Libonias, and the customary greenhouse plants well done. The next two houses were early and late vineries, the Grapes being colouring in the former. Among the Vines noticed bearing magnificent bunches were Muscat of Alexandria, Black Hamburgh, White Tokay, not seen as often as its merits seem, and Buckland Sweetwater. Gros Colman seemed very promising in the second house—young Vines. The stove came next. Allamandas, Stephanotis, and Schubertia graveolens—figured in Journal, if I remember rightly, but seldom seen—cover the roof, and a choice selection of tropical Orchids look promising. Many brilliant foliage and flowering plants meet the eye around. But we must proceed and draw to a close after only a look into the orchard, Peach, and Nectarine houses, though, like "Yarrow unvisited," three large terrace gardens, the fruit and vegetable gardens are still unnoted, with remarkably interesting herbaceous borders. Permit us in concluding to warmly acknowledge Mr. Weller's courtesy, and Mrs. Weller's hospitable reception, and to note the creditable manner in which every department is conducted, indicative of still further progress.—W. J. MURPHY, *Clonmel*.

[The photograph shows wonderful growth, but too indistinctly for engraving.]

SPECIALTIES AT PERRY HILL.

CALCEOLARIAS.—Messrs. J. Carter & Co. have a large house devoted to Calceolarias in their Perry Hill nursery, and for several weeks they have afforded a beautiful display, well illustrating the high quality of the strain. The greatest care is exercised in crossing distinct forms and preserving those which show a marked advance in form and colouring, and there is now promise of a fine crop of valuable seed. The colouring is too diversified to be described, but all know what a surprising range of tints is displayed in a good strain of Calceolarias. Some are delicately spotted or reticulated in rich shades on a light ground, others have bold marbling, and others still have broad zones or are nearly self-coloured. From the deepest crimson, rosy purple, maroon, bronze, or orange to the purest yellow shades, the intermediate tints are numerous, and further recommendations are found in the compact habit of the plants, with their dense heads of large blooms.

PETUNIAS.—For some years special attention has been paid to these plants at Perry Hill, and Messrs. J. Carter & Co. have succeeded in forming a strain of exceptional beauty and variety. This has been termed the Emperor strain, and comprises a wonderful range of colours from pure white to delicate rose, the richest crimsons and deepest blue-purples, striped, spotted, veined, and diversified in the most beautiful or fantastic manner. A few of the types have received distinct names, and amongst these are the following:—Single, Clematis section, blue with white centre; blue veins, crimson or blue veined on a lighter ground; striped and spotted, crimson and blue on white, yellow throat; Queen of Roses, bright soft rose, white throat, very free and dwarf; Duchess of Connaught, bright crimson with a broad green margin, very peculiar and striking; Danish Flag, white centre, the lobes edged crimson; Crimson King, White Pearl, and Purple Prince, indicating their prevailing colours. Amongst the doubles the chief types are crimson and

white, maroon, rosy mauve, bright rose, blue, purple, white, rosy crimson, and white and crimson parti-coloured. In the mixed strain there is a combination of these characters, and the plants are useful alike for pots, windows, and baskets.

MIMULUS.—Three grand varieties or strains of these are Ruby, Queen's Prize, and Jubilee, and the groups recently shown at the metropolitan exhibitions attracted more than ordinary attention. The flowers are of great size like enormous Gloxinias, of fine substance and richly spotted or marked with crimson, maroon, and orange. For culture in pots or borders they are very valuable, and those who are only acquainted with the common garden Mimulus have no idea what an improvement has been effected in the size of the flowers and colouring.

Pyrethrums have been very gay, a large space of ground being occupied with the best named varieties. Some thousands of Stocks are advancing rapidly, and in another but important department is a trial of hybrid Wheats, which will constitute an interesting feature for agriculturists later in the season.

TREE MIGNONETTE.

IN March or April, better the middle of the former, select rather more of clean 60-sized pots than you wish for specimens of Mignonette trees, to make allowance for a few not turning out so well as the rest. Drain these pots, and fill them to within a quarter of an inch of the rims with rich light loam, such as might be made with two parts of brown hazelly loam, one part of very decomposed sweet leaf mould, half a part of heath soil, and less than half a part of silver sand; then drop a few seeds—say four—in the centre of each pot, covering them evenly. The common Mignonette answers very well. The large-flowering Mignonette will produce stronger stems and larger trusses; but we think the old common sort blooms in general more profusely—but either will bloom abundantly if well treated. When sown the best place for the pots is the back of a Cucumber or Melon bed, where the pots can be plunged, and air given to the young plants as soon as they appear. In such circumstances they will not be long before they make their appearance.

As soon as the plants are half an inch in height examine those in each pot narrowly, and select the one that seems the most hold and luxuriant, either pulling the others out, or, what is better, cutting their stems below the surface with the point of a penknife, so as not to injure the roots of the one plant left in each pot. Were it not for this power of selection, and the certainty of getting a good plant, it would be as well to sow only one good seed in a pot at once. By the time the plant is an inch in height any side shoot that offers to come should be disbudded, picking it out, but allowing the leaf next the stem to remain. When the centre shoot is from 2 to 3 inches in length a little twig should be set against it, and the little stem tied to it to encourage it to mount, nipping out every side shoot that shows, but allowing the leaf to remain, as that adds strength to the stem, and, besides, gives it a more furnished appearance. The little twig stake should be 1 or 1½ inch from the stem; and in the process of growth, as a larger and stouter stake becomes necessary, the lesser stake should be carefully taken out and the larger one inserted in the same hole, so as to run as little risk as possible of injuring the roots.

As soon as these little pots are getting full of roots, and before the roots meet the sides of the pot, shift each plant into a large 48-sized, and plunge the pot, and keep training the main stem and disbudding all side shoots as before. As soon as that pot is filled shift into a 32-sized pot, and let the soil be a little rougher, and give a little bottom heat as before. If the main shoot go on without showing flower it will be all smooth sailing, the disbudding of all side shoots being the principal thing; but if the leading shoot show bloom it must be nipped off, and then the best-placed shoot that comes you must train off as a continuation of the first stem; and sometimes if you want a tall stem, you may have to do this several times before you obtain the desired height. Whatever the height of the stem before the head forms, be it 1 foot or a couple of feet or more, no flowers should be allowed to remain until the stem is as high as desirable; nor even then until the head of the tree is pretty well formed.

When the 32-sized pot is about full of roots I prefer placing the plants in their flowering pots, and a pot of 12 inches in diameter and depth will support a very nice specimen. In this last potting—and the pot may be larger if an extra-sized specimen is desirable—the drainage must be well attended to, and the soil chosen of a more lumpy character, so as to avoid anything like stagnant water; and to help this still more, a few additional pieces of fibry heath soil, and some bits of charcoal the size of beans, may with advantage be added to the compost. This rough material should be squeezed together pretty tight, and the surface covered all over with fine material to the depth at the sides of at least half an inch, which will prevent the air entering the soil too freely. In all such shiftings care must be taken that the soil in the pot is moist, but not deluged, before shifting; and this will be best secured by watering thoroughly four hours or so before repotting. After this final repotting, if the pots can be partly plunged in a mild heat for a fortnight or so it will be all in their favour; but by July they will stand well in any pit or house where they can receive moderate attention. In such places the plants will do better when the pots stand on a shelf, or on the bottom of another pot reversed; as when the pots stand on the ground the drainage is apt to be injured, and the exhalations that rise from such wet ground are not at all in their favour.

Until the head is formed it is advisable to have a frill of leaves all along the stem, but no side shoots; that, as above stated, not only furnishes clothing, but gives strength to the stem. As the head swells in diameter the leaves on the stem will most likely be robbed, and will then fall off. In general it would be best to have the shortest-stemmed plants for winter blooming, and the tallest for spring blooming, as the former may be supposed to perfect their heads sooner. In both cases the treatment is much the same, as the plants should not only be kept airy, but in a temperature of from 45° to 48° or 50° in winter, with a rise from sunshine.

In training many contrivances may be adopted with wire, &c., for supports. I will describe a very simple mode. I will suppose that the stem is high enough for the lower branches of the future tree. Well, the plant is held carefully, the old temporary stake removed, and a stout one, fully half an inch in diameter, is inserted firmly in the same place, and as much higher above the lower branches as we wish the point of the tree to be, say some 15 inches above the lower branches. Well, after tying the stem securely to the stake, the next operation is to make that secure in the pot, so as to carry the weight of the future head, and no simpler plan exists than taking two pieces of wire at right angles from the stake across the rim of the pot, and fastening them there. Then two holes at right angles a little apart from each other about the level of the lower branches, say 18 inches from the pot, will do for putting through two stout wires like the spokes of a wheel. A wire fastened to the points will form the circumference, and lesser wires between will furnish the means for tying the branches; 6 or 8 inches higher up other two wires should be inserted for a smaller circle, and thus the orbicular pyramidal head may be easily secured. There must be regular stopping and training, and nipping off all flower buds until the head is formed, and then each shoot may bloom as it likes.

When the head is forming, and also when in bloom, clear manure water, and not too strong, may be pretty freely used, except in very dark weather in winter. To keep the plants long healthy and producing abundance of bloom, no bloom should be allowed to remain when it is old or showing signs of seeding. One truss with seeds swelling will injure the plant more than a score of half-opened trusses. This continued pruning away of every flower when past its best, even though the point should be fresh, is the secret for keeping plants long in health. By such means we have seen a plant of common Mignonette grown in the common way, or hanging over the pot, very good after it had been in the same pot seven years. When these tree Mignonette plants are a full mass of bloom at one time this thinning of flowers must be done freely if the plant is to keep on long afterwards. By this free thinning, stopping and training in summer, and fresh surfacings of good soil, the same plant will continue for years; but there is so much trouble in keeping the soil in a healthy state in such large pots through the winter, that generally it will be the best plan to sow and grow one season for blooming during the earliest part of the next.

When I was fond of such plants I used to grow some as pyramids—that is, the base of the cone on a level with and falling over the rim of the pot, and the plant gradually lessening in width to the apex. Such plants from 15 to 20 and 24 inches in height are very pretty. The main features of management are the same, with the exception of securing the necessary and right-placed side shoots; and to produce them the stem had sometimes to be stopped, as there was little risk of that not getting up.

The above remarks, however, apply only to what are generally called tree Mignonette plants. There is but one little point concerning them which I have overlooked, and that is carefulness in watering if the last shift should be a large one. In that case only the new soil in proximity with the ball and the ball itself should be watered, and the bulk of the new soil at the sides of the pot should not be deluged until the roots are working in it. This rule applies to all large shifts, as otherwise the soil is apt to become soured; and if so, the Mignonette trees will not flourish.—H. R.

ROYAL OXFORDSHIRE HORTICULTURAL SOCIETY.

JUNE 19TH.

THIS was what is known as the Commemoration Show, as it always takes place during the week of the Great University Festival of Oxford, and it was held as usual in one of the College gardens, that of Worcester, a most delightful place for such an exhibition, with a large expanse of smooth green sward, shady walks, and magnificent trees, with the addition of a spacious lake. Three large tents were required to contain the exhibits, and even then some of the cottagers' products had to be provided for in the open ground. The day was unpleasantly cold, but there was a large and fashionable attendance, the cut flowers especially appearing to attract great attention.

CLASSES OPEN TO ALL ENGLAND.—*Plants.*—One of these was for nine stove and greenhouse plants in flower, Mr. James Cypher, nurseryman, Cheltenham, being placed first, with excellent specimens of Ixora Williamsi, Dracophyllum gracile, Phœnocoma prolifera Barnesi, Bougainvillea glabra, Anthurium Schertzerianum Veitchi, Aphelexis spectabilis, Erica depressa, and two Azaleas. Second, Mr. J. F. Mould, nurseryman, Pewsey, Wilts, whose best plants were Genetyllis fuchsioides, Dipladenia profusa, Franciscea calycina major, Clerodendron Balfourianum, a very fine specimen, Erica Cavendishiana, and E. austella. Third, Mr. H. James, Castle Street Nursery, Lower Norwood. Mr. Cypher also had the best six Cape Heaths, staging good fresh specimens of depressa, ventricosa grandiflora, tricolor Wilsoni, tricolor elegans, ventricosa hirsuta, and Kingstoniana. Second, Mr. H. James, his best specimens

were tricolor Wilsoni, ventricosa tricolor, and Candolleana. Pelargoniums in twelves were also invited, and Mr. C. Turner of Slough has generally shown in this class, but could not on this occasion. The first prize withheld, a second being awarded to Mr. J. Mattock, Headington Hill, Oxford. Fancy Pelargoniums were also invited, but none were forthcoming.

Cut Flowers.—Mr. J. Mattock was the only exhibitor of twenty-four varieties of Roses, three trusses of each, his best blooms being Catherine Mermet, Souvenir d'Elise, Rubens, Perle des Jardins, Niphetos, Maréchal Niel, Devoniensis, Souvenir d'un Ami, Marie Van Houtte, Jean Ducher, Madame Lambard, and Grace Darling. Mr. Geo. Prince, nurseryman, Oxford, had the best twenty-four Roses in single trusses, staging capital blooms of Comtesse de Nadaillac, Maréchal Niel, Madame de Watteville, Princess of Wales, Souvenir d'Elise, Grace Darling, Adam, Alba Rosea, Duke of Edinburgh, Lady Mary Fitzwilliam, Niphetos, and Madame Lambard. Second, Miss Watson Taylor, Manor House, Headington (the addresses of gardeners are not given at Oxford), with Maréchal Niel, Xavier Olibo, Rubens, Devoniensis, Souvenir d'Elise, Perle des Jardins, Madame Lambard, La France, and Catherine Mermet. Third, Mr. J. Walker, nurseryman, Thame.

Dinner Table Decorations.—With three stands Mr. J. Mattock was first, arranged after the usual pattern, but showing the common fault of being too heavily loaded; J. S. Parker, Esq., Iffley, Oxford, being second. Mr. J. Johnson, Garsington, Oxford, had the best hand bouquet, a remarkably good one, composed wholly of white flowers; Mr. Geo. Jacob, White Lane Nursery, Witney, being second with one composed mainly of Orchids. The best single piece for table decoration came from Rev. H. A. Pickard, Canterbury Road, Oxford.

Members' Plant Classes.—The best eight stove and greenhouse plants in flower came from G. H. Morrell, Esq., Headington Hill, who had Bougainvillea glabra, Justicia carnea, with some fine spikes of bloom; Tabernæmontana coronaria flore pleno, Impatiens Sultani, and Vincas alba and rosea. There were no other exhibitors. With six specimens, Mr. Geo. Jacob, Mill Lane Nursery, Witney, was first with Clivia miniata, Cattleya Mendeli, Oncidium sphacelatum, Anthurium Scherzerianum, and Cypripedium barbatum. Mr. G. H. Morrell had the best six variegated and ornamental foliaged plants, having good specimens of Croton Warreni, Caladium Chantini, Dracæna Shepherdi, D. metallica, Cissus discolor, and Pandanus Veitchi. Second, Mr. Geo. Jacob, Witney. The best specimen stove plant was Cattleya Gaskelliana from Mr. Geo. Jacob; Mr. G. H. Morrell being second with Ixora coccinea. The best specimen hardy plant was a fine piece of Cypripedium spectabile from Mr. R. Price, Headington; Mr. R. H. Byass, Rousham Park, being second with Deutzia crenata fl. pl. The best ornamental foliage plant was a fine Chamærops excelsa from Mr. G. H. Morrell; Mr. Geo. Jacob coming second with Encephalartos villosus.

Orchids.—The best four specimens came from Mr. G. Jacob, who had Cattleyas Mossiæ and Mendeli, Odontoglossum vexillarium, and Cypripedium barbatum. Second, C. A. Bevers, Esq., Oxford, who had Odontoglossus citrosmum, Dendrobium thyrsiflorum, Cattleya Mendeli, and C. Mossiæ.

Miscellaneous Flowering Plants.—These were shown in good condition by Messrs. Jacob and others. Achimenes were rather small, but nicely grown and bloomed. Some very good herbaceous Calceolarias were staged by Mr. J. Walker, Thame, and also by Mr. R. J. Johnson, the awards being made in the order of their names. Fuchsias were a good feature, some very nice free-growing and well-flowered plants from Mr. J. Walker being placed first, the varieties being Rose of Castille, Charming, Grand Duchess Marie, Warrior, Mrs. Marshall, and Mrs. Rundle; all good exhibition sorts. Second, Mr. J. Johnson with smaller specimens. Some fine specimens were also shown in the class for three varieties. Begonias (Tuberous) were a good feature also. Mr. J. Mattock was first with some capital varieties; Mr. R. Price of Headington being second. Pelargoniums in the members' classes were somewhat poor. Mr. J. Mattock had the best nine show varieties, Mr. Dallon, Norbury Gardens being second. Mr. C. Jacob had the best six varieties. Mr. Jacob also had the best six Zonals, showing fresh and well-bloomed specimens, Mr. J. Johnson being a good second. They were also shown in collections of four plants. Double varieties were shown in better form than the singles, Mr. Owen Grimbley, Summertown, being first, and Mr. J. Johnson second. Tricolors were a good feature, well grown and coloured plants abounding. Mr. J. Mattock was first with six, having Empress of India, Lady Cullum, Mr. H. Cox, Sophia Dumaresque, Elegans, and Diadem. Second Mr. C. Jacob with much the same varieties. Ivy-leaved varieties in sixes were equally good, nice, bushy, well grown, and flowered specimens.

Exotic and Hardy Ferns.—These were well shown, but owing to the press of visitors it was impossible to glean particulars. The hardy Ferns were a remarkably good feature.

Cut Flowers.—It is a practice at Oxford to show small bouquets in twenty-fours, and they, as might be expected, are generally of an inferior character. It would be much better to substitute for these bunches of stove and greenhouse flowers. The best came from Mr. J. Johnson, Garsington, Mr. John Walker being second. Mr. T. Anstiss, Brill, Bucks, had the best nine bouquets, the Rev. H. A. Pickard, Canterbury Road, being second. Bouquets for the hand and buttonholes did not call for special notice. Zonal Pelargoniums in bunches of nine were also well shown, the best coming from Mr. J. Mattock, Mr. John Walker being a good second. We were pleased to see some of the florists' Ranunculus, and though not in good condition it shows they are still cared for. The best came from Mr. P. Southby of Bampton, Oxon. Pansies of the fancy class were well shown by Mr. Joseph Lakin of Temple Cowley, who had the best twenty-four, Mr. John Akers of Stanton Harcourt taking the first prize for the best twelve. A dozen Pinks were shown by Dr. B. Ward, Warneford Asylum, but they showed the effects of an unkind season. Evidently attempts are still made to grow some of the old florists' flowers about Oxford. Pyrethrums in bunches of three blooms made a good feature, set up in nine varieties backed by their foliage; but the finest feature of all was the stands of twelve bunches of hardy herbaceous cut flowers. Here Mr. J. Lakin was first with a very fine lot in large bunches well displayed, Mr. R. Price, Headington, being second. There were several classes for Roses also, but the best varieties shown have already been given.

Fruit were limited in quantity, but generally good; the three best bunches of white Grapes were Foster's Seedling from Col. Miller, Shotover House, Wheatley; Col. Lee, Aylesbury, being second with the same. Three good but unripe bunches of Duke of Buccleuch were staged in this class. Mr. Geo. Parker, Great Tew Park, had the best three bunches of Black Hamburgh Grapes, R. N. Byass, Esq., being second. Col. Lee had the best dish of Peaches, showing Alexander; Mr. P. Southey being second with Stirling Castle. The best Melon was Hero of Lockinge.

Vegetables were remarkably well shown, especially for the special prizes given by Messrs. Sutton & Sons of Reading, and Messrs. Webb and Sons, Stourbridge. There were several classes for these, Potatoes being perhaps the weakest display, which is not to be wondered at considering the late season. There was also a very good display of cottagers' vegetables, the collections of cut flowers being particularly interesting.

SOWING AND GROWING CABBAGE.

BEING asked by Messrs. Stuart & Mein to put on paper our mode of growing Cabbage, I have great pleasure in doing so; but would here remark that our time of sowing will not suit all, and that each gardener or amateur ought to have his own calendar to suit his locality. The first thing to attend to is the purchasing of the seed, and also the variety, and from some reliable firm. I have grown Stuart & Mein's No. 1 for some years, and find it our best early.

The soil for the seed beds should be light, moderately rich, and well pulverised. We sow our seed as near as possible about the 17th July, in shallow drills, the full width of a draw hoe, from a foot to 14 inches apart, covering thinly with fine soil, and finishing by beating it lightly with the back of a rake. By sowing in drills the plants can be easily thinned, and kept stirred with a hoe. By these means fine plants can be reared, which must not be allowed to become crowded, which will enable them to form good plants with fine roots without pricking out; and if all goes well, the plants are ready for planting the first week in September, which we always manage to do, on a piece of ground thoroughly prepared—trenched, if possible—as no one can grow good tender succulent Cabbages on the non-digging principle.

Cabbages like to grow on ground of a good substantial nature, which has been heavily dunged for a number of years. We use enormous quantities of farmyard manure, not much decomposed, which we bury to the depth of one spit below the surface. We do not use any artificial manure, as we think the farmyard manure keeps the soil open and acts as a drainage, which enables the plants to grow better in winter and spring. In planting out advantage should be taken of moist weather, if possible; but should the weather be dry, we always plant towards evening, puddling the roots in a mixture of soot and lime, and by carefully lifting the plants, planting firm, and giving a good watering, anyone can grow Cabbages to suit the most fastidious, and, if need be, "Go in and win."—D. INGLIS, *Howick Hall, Northumberland.*

[Mr. Inglis was the winner of the £5 prize for Cabbages offered by Messrs. Stuart & Mein last year.]

REVIEW OF BOOK.

Handbook of the Amaryllideæ, including the Alstræmeriæ and Agaveæ. *By* J. G. BAKER, F.R.S., F.L.S. London: George Bell and Sons, York Street, Covent Garden.

THIS useful work of reference is the outcome of a long experience and a close study of the plants on which it treats, for Mr. Baker states in the preface "During the twenty-three years I have been at Kew I have made notes of the characters of all the Amaryllideæ that have passed through my hands in a living state, and have had the opportunity of examining dried specimens of nearly all the species of the order. I have attempted in the present work to furnish cultivators and botanists with a compact working handbook, of which the main part consists of characters of the genera and species drawn up from actual specimens. I have not attempted to deal fully with the bibliography of the plants, or to trace out their pre-Linnean history, or to say anything about their cultivation, or to deal, except very briefly, with the garden hybrids, which are so numerous in this order."

The book comprises 216 closely printed pages of botanical descriptions in English of sixty-one genera and about 670 species, the principal references to authorities and figures being included, together with particulars of geographical distribution and many historical facts, especially in regard to the genera Narcissus, Hippeastrum. Though essentially a work of botanical importance, the descriptions are so clear and intelligible that the book will be interesting and useful to all horti-

culturists who are specially concerned in the numerous plants included in the Amaryllidcæ. Some of the chief garden genera are Narcissus, Galanthus, Leucojum, Hippeastrum, Vallota, Clivia, Hæmanthus, Crinum, Amaryllis, Eucharis, Pancratium, Alstrœmeria, and Bomarea. It may be mentioned that Imantophyllum is now reduced to a subgenus, and the numerous varieties grown in gardens must be ranked under Clivia miniata, C. nobilis and C. Gardneri being the only two other species. Imantophyllum cyrtanthiflorum is named as a hybrid between Clivia miniata and C. nobilis. A copious index of specific and varietal names increases the value of the work, which is well printed and neatly bound, and, it need scarcely be said, is thoroughly reliable.

ROYAL BOTANIC SOCIETY.

JUNE 20TH.

THE second summer Show of the year was held in the Botanic Garden, Regent's Park, on Wednesday, and though the plant exhibits were not quite so numerous as usual, owing, it is said, to reductions in the prizes, there were numbers of non-competing exhibits of a most interesting character, and the fruit Show was one of the best, both in quality and quantity, yet held in London at midsummer. The weather unfortunately was of a most unfavourable character, rain falling the whole of the day, and this deterred many visitors from attending, but the Show was visited by the Duke of Teck and the Princess Mary early in the afternoon.

ORCHIDS.—A fine bank of Orchids was again formed in the centre of the large marquee, many large specimens and choice forms being represented. In the amateurs' class for twelve Orchids Mr. F. Hill, gardener to H. Little, Esq., The Barons, Twickenham, won first honours for grand specimens of Cattleya labiata Warneri, C. Mossiæ, C. Mendeli, and C. Sanderiana, each with some dozens of large flowers; Lælia purpurata and L. purpurata splendens were also noteworthy, the latter a handsome variety with broad rich crimson lips. Cattleya intricata, a supposed hybrid between C. amethystina and Lælia elegans, was interesting; Anguloa Clowesi; Cypripedium barbatum superbum, extremely fine; C. Lawrencianum, also good; and Vanda teres completed this admirable group. Mr. H. James, Castle Nursery, Norwood, took the lead in the nurserymen's class for a dozen specimens with Cattleyas, Cypripediums, Odontoglossums, &c., Mr. J. Cypher, Cheltenham, being second for a much more effective group, comprising good Cattleyas, a remarkable Dendrobium Falconeri on a block, capitally flowered, and a good variety; also Calanthe veratrifolia, and Epidendrum vitellinum majus, well flowered. Mr. Hill was also first for a group of Cypripediums and Dendrobiums, including small but healthy samples of C. barbatum superbum, C. calurum, C. lævigatum, C. Dayanum, C. superciliare, C. Crossianum, C. niveum, C. Warneri, C. ciliolare, C. Veitchi, and Dendrobiums Dalhousieanum, densiflorum, and others. Mr. Cypher was first for a group of Dendrobiums and Cypripediums in the nurserymen's class, tastefully arranged with Ferns, and Mr. H. James was second with a much smaller and less beautiful group. Messrs. F. Sander and Co., St. Albans, exhibited a group of choice Orchids, comprising Cattleyas, Odontoglossums, including very fine varieties of O. Alexandræ and O. vexillarium, a richly coloured variety of the latter named ruberrimum being very noticeable.

Pelargoniums.—These furnished some welcome colour on the slopes near the entrance. Mr. C. Turner, Slough, had the best six plants of show varieties in the nurserymen's class, even neat specimens, with handsome flowers of Maid of Honour, Gold Mine, Volonté Nationale, Despot, Prince of Prussia, and Prince Leopold. Mr. Hill was first in the amateurs' class, Hermit, Ruth Little, and Fortitude being excellent in number and size of flowers. Mr. D. Phillips, gardener to R. W. Mann, Esq., Langley Broom, Slough, following with smaller plants. With six fancy Pelargoniums Mr. Turner was also first, Ellen Beck being a handsome example, over 3 feet in diameter and crowded with flowers. Mr. Phillips was first with the only exhibit in the amateurs' class for small but neat plants. Zonal varieties were shown by Mr. Hill, Mr. D. Phillips and Mr. H. Eason, gardener to B. Noakes, Esq., Hope Cottage, Highgate, who secured the prizes in that order with good plants, scarlet varieties predominating.

Messrs. H. Cannell & Sons, Swanley, besides having a choice group of novelties had a collection of Tuberous Begonias, for which the first prize was awarded in the class. The varieties shown were single, T. Moore, Mr. Murphy, Countess of Bessborough, and Fairy; double, Louis d'Or, Mrs. F. Wilson, M. Duvivier, Madame Arnoult, Felix Crousse, Mrs. A. Paul, and Gabrielle Legros. Stove and greenhouse plants were few and small, Messrs. H. James, A. Offer, and R. Butler securing the chief prizes in the several classes. Foliage plants and Ferns were shown by Mr. A. Offer, gardener to J. Warren, Esq., Handeross Park, Crawley, Mr. Eason, Mr. H. James, Mr. R. Butler, gardener to H. H. Gibbs, Esq., St. Dunstan's Lodge, Regent's Park.

FRUIT.—For such an early period in the season there was a remarkably good display of fruit, the only weak point being in the white Grapes, which were mostly somewhat green, as is customary at the early shows. In the Fruiterers' Company's class for a collection, Mr. J. Roberts, gardener to Messrs. Rothschild, Gunnersbury Park, Acton, won chief honours for admirable specimens of Black Hamburgh Grapes, with large bunches of Foster's Seedling, but rather green, and compact bunches of Buckland Sweetwater, a fine Smooth Cayenne Pine, good Early Mignonne Peaches, handsome Lord Napier Nectarines, neat fruits of Gunnersbury Gem and Hero of Lockinge Melons, La Grosse Sucrée and Keens' Seedling Strawberries, Brown Turkey Figs, Black Tartarian and Bigarreau Napoleon Cherries. In all nineteen dishes were shown, a very creditable exhibit. The second place was taken by Mr. J. Edmonds, Bestwood Gardens, Arnold, Notts, who had excellent Black Hamburgh Grapes, good Peaches and Nectarines, and Melons. Mr. P. Blair, gardener to the Duke of Sutherland, Trentham, was third, showing two handsome Pines, with fine Peaches and Nectarines. A large bronze medal was also awarded to Mr. W. Robins, gardener to Col. E. D. Lee, Hartwell House, Aylesbury, for a collection of twenty-one dishes, comprising eight Melons, Grapes, Peaches, and Nectarines.

For one Queen Pine Apple, Mr. H. Cakebread, gardener to Sir P. F. Rose, Rayners, Bucks, was first with a fine even fruit. Mr. T. Coomber, gardener to J. A. Rolls, Esq., The Hendre, Monmouth; and Mr. T. Dawes, gardener to the Hon. Mrs. Ingram, Temple Newsam, Leeds, were second and third. For any other variety, Mr. J. Muir, gardener to C. R. M. Talbot, Esq., Margam Park, South Wales, was first with a good Smooth Cayenne, followed by Mr. W. F. Smith, gardener to Mrs. Byass, Nevill Court, Tunbridge Wells, with Charlotte Rothschild, and Mr. Hare third. Messrs. T. Hare, J. Douglas, and J. Hollingworth were the prizetakers for Melons, ten fruits being shown.

GRAPES.—An extensive display of black Grapes was provided. Mr. Edmonds had the best basket of Black Hamburghs, large berries and capitally coloured. Mr. Osman, gardener to C. J. Baker, Esq., Ottershaw Park, Chertsey, was a good second, and Mr. Hollingworth third, amongst nine exhibitors, all showing well. For a basket of white Grapes, Mr. R. Grindrod, gardener to Mrs. Greathed, Whitfield, Hereford, was first with fine clean Muscat of Alexandria. Mr. G. Clinging, gardener to Walpole Greenwell, Esq., Marden Park, Caterham, was second with Foster's Seedling; and Mr. Hollingworth third with the same variety. Five competitors entered. The class for three bunches of Black Hamburgh was well filled, ten exhibitors staging good samples. Mr. Edmonds was first for beautifully coloured even bunches; Mr. T. Osman a close second, and Mr. G. Clinging third, with neat bunches and small berries, but bearing a dense black bloom. In the any other black variety class, Mr. Roberts took the lead with Madresfield Court, handsome in bunch and berry, but not fully coloured. Mr. Cakebread was second with smaller bunches of the same variety, and Mr. G. Thomson was third.

Amongst the six exhibitors of three bunches of Muscat of Alexandria, Mr. G. Gummett, gardener to A. Richards, Esq., Blenheim Park, Hounslow, was first, Mr. P. Feist second, and Mr. Cakebread third, but all were deficient in colour, though fine in bunch and berry. In the any other variety class there were eight entries, Mr. W. Chuck, gardener to P. Thellusson, Esq., Brodsworth, Doncaster, won first honours with excellent bunches of Duke of Buccleuch very fine in berry, and clean. Mr. Roberts was second with large solid bunches of Foster's Seedling, and Mr. Clinging third for the same variety, well coloured, but smaller.

With two dishes of Peaches, Mr. W. H. Divers, gardener to J. T. Hopwood, Esq., Ketton Hall, Stamford, won first prize, showing Royal George and Early Albert large and highly coloured. Mr. W. Robins was second with Acton Scott and Alexander, and Mr. Gilman, Ingestrie Gardens, Stafford, third with grand fruits of Violette Hâtive, but rather weak samples of Royal George. For two dishes of Nectarines Mr. P. Blair was first for Lord Napier and Violette Hâtive, the former large and the latter richly coloured. Messrs. Hare and Gilman were second and third respectively. Messrs. Divers, Worthing, and Hare were the successful exhibitors of Strawberries, and Messrs. Blair, Hare, and Palmer with Cherries; a bronze medal being awarded to Messrs. T. Rivers & Son, Sawbridgeworth, for a capital collection of Peaches and Plums, and a small silver medal to Mr. T. Coombe, The Hendre Garden, Monmouth, for six fine even Queen Pine Apples.

CUT FLOWERS.—These occupied a large space in the first tent, Roses being particularly fine. Some of the chief winners were Mr. P. Perry, gardener to Mrs. Rowlett, The Woodlands, Cheshunt; Mr. W. Robins, Rev. D. King, Cambridge; Messrs. C. Turner, Paul & Son, Keynes, Williams & Co., and J. Burrell & Co., Cambridge. Miscellaneous flowers and Orchids from Mr. H. James, J. Cypher, and J. Douglas, who was first in the class for twelve varieties of Orchids. Roses were extensively shown, the prizes being awarded to Messrs. Barr & Son, T. S. Ware, and Paul & Son in that order.

MISCELLANEOUS.—The miscellaneous exhibits as usual constituted a very important portion of the attractions, and amongst them were the following:—A large handsome group of Orchids, with stove and greenhouse foliage and flowering plants from Mr. B. S. Williams, Holloway (large silver medal); a brilliant group of Tuberous Begonias, Caladiums, Gloxinias, Ferns, and Palms from Messrs. John Laing & Sons, Forest Hill (large silver medal); a most tasteful collection of Petunias and ornamental Grasses from Messrs. J. Carter & Co., High Holborn (large bronze medal); a group of handsome Cattleyas from Mr. Little (small silver medal); a tasteful group of Orchids from Mr. G. Elliott (small silver medal); and an effective group of Orchids from Messrs. Low & Co., Clapton (silver medal). Mr. R. Scott, gardener to Miss Foster, The Holme, Regent's Park, had a group of Fuchsias, Hydrangeas, Spiræas, Gloxinias, and Ferns (small silver medal).

Messrs. J. Veitch & Sons, Chelsea, exhibited a large group of Japanese Maples, Lilies, the variegated Arundo Donax, the elegant Eulalia gracillima, and a number of choice shrubs, comprising Elæagnus macrophyllus, Rhus glabra laciniata, Spiræa opulifolia lutea, and the golden Ligustrum vulgare aureum, Weigela rosea Looymansi aurea, with

the handsome Rhododendron-like Daphniphyllum glaucescens, and large plants of greenhouse Rhododendrons. All these were most effectively arranged, and there was also a fine collection of Irises and hardy flowers from the same firm (large silver medal).

Mr. T. S. Ware, Tottenham, was first with a group of hardy flowers, followed by Messrs. Paul & Son. Messrs. Collins Bros. & Gabriel, Waterloo Road, had a large group of hardy flowers (certificate). Messrs. Barr & Son, Covent Garden, a similar but more varied group (bronze medal). Mr. T. S. Ware also had a large group of hardy flowers (large bronze medal). Messrs Kelway & Son, Langport, sent nineteen boxes of Pyrethrums and Pæony blooms, most varied and brilliant in colour. Messrs. Paul & Son, Cheshunt, had a collection of choice alpine and other plants.

Messrs. T. Rivers & Son, Sawbridgeworth, exhibited a most interesting group of fruit trees in pots, admirably grown specimens of Peaches, Plums, Pears, Apples, &c., all bearing fine crops of fruit. In the corridor this group attracted much attention (silver medal). Mrs. Harry Turner, Horsemoor Green, Langley, Bucks, sent a handsome plant of Carnation Souvenir de la Malmaison, with ten fine blooms (commended). Messrs. J. Peed & Son, Roupell Park Nursery, had a group of Anthurium Scherzerianum and Ferns (large bronze medal); and Mr. H. Eason sent a group of Gloxinias and Ferns (certificate).

Large numbers of certificates were awarded for new plants, but we must refer to them in our next issue.



HARDY FRUIT GARDEN.

Cherries.—In some districts extra heavy crops of these are swelling, and those on the walls especially will well repay for a timely thinning out. When too many are left on the trees the fruit is apt to be small and poor in quality, whereas choice Cherries cannot well be too large, always providing they are grown in a sunny position. A pair of Grape scissors is most suitable for the work of thinning the fruits, and in many instances fully one-half of the fruits may be cut off with advantage. Left to themselves the trees will frequently refuse to swell the whole of the crops, but this natural thinning-out process has a most weakening effect, and ought to be prevented. All leading growths to be laid in to their full length, but the laterals ought to be at once stopped at the seventh or eighth joint, this favouring the formation of numerous fruit buds at their base. Morellos may also be improved by being thinned out in good time, but as these fruit on the one-year-old wood, the young growths should only be thinned, reserving sufficient to lay in between the old wood or to take the place of shoots fruiting this season. Not being of very rank habit of growth the young growths need not be laid in; in fact, it is better for the fruit now hanging on the trees that no attempt should be made to nail or tie in the young growths.

Plums.—The commoner varieties are the surest setters, many of the Gages, as well as Jefferson's and Kirke's, failing to set more fruit than the trees are capable of supporting. Not so Rivers' Prolific, Victoria, Early Orleans, Prince of Wales, and Goliath, these being literally crowded with fruit, none of which will be of any real value unless the crops are freely thinned. The thinning may be done gradually, commencing at once, the later thinnings being given when the fruit is large enough for cooking purposes. Green Plums also make good preserve, and whether thus utilised or not they ought not to be left in a crowded state on the trees. Young growths may be laid in to their full length wherever there is wall space to be filled, but that not so required ought to be thinned, and those reserved and which are best springing out from the walls should be stopped at the sixth or seventh joint. Trees long in one position and bearing a heavy crop may well receive liberal supplies of liquid manure as well as a mulching of strawy manure, and orchard trees should have a number of holes pierced with an iron rod in the ground about the roots, and then receive a few tubs of farmyard liquid manure at the same strength as applied to meadows.

Insect-infested Trees.—Caterpillars have been very troublesome among both Apple and Pear trees, these eating many of the leaves and young fruit. The only remedy is to examine the trees and crush all found coiled up in the leaves, at the same time thinning all clusters of fruit where the caterpillars are most to be found, leaving only the soundest of the former, and crushing the latter. It was the abundance of bloom that favoured the lodgment of the eggs by tiny moths, the petals hanging about the clusters of fruit till either removed by the hand or washed off by heavy rains. The black fly is very thick on some of the best Cherry trees, and unless washed off will soon spoil the fruit. Soapy water applied forcibly by a syringe or engine and followed by clear water will dislodge the greater portion of them. A weak solution of tobacco water is also effective. A free use of the engine is necessary in the case of aphis-infested Plum trees, and as the water is beneficial to the roots no better remedy can be applied.

Planting Forced Strawberries.—Plants of Vicomtesse Hericart de Thury fruited early in pots will, under ordinarily good treatment, yield a second crop in the autumn. The fruit can be ripened in the open, or if need be the plants may be lifted, repotted, and set on a shelf in a cool house to ripen the fruit in October and November. Another plan, which answers equally as well, is to plunge the plants in the pots so as to quite bury the latter, a border near to a pathway being the best position. Being kept supplied with water the roots soon find their way into the surrounding soil, and this materially assists the plants. When lifted in the autumn much of the soil and the outer roots may safely be cleaned off the pots, and with the aid of small saucers of water extra fine late crops result. Plants of Sir J. Paxton, President, Sir C. Napier, and other favourites that have been either forced or fruited under glass, duly planted out, will not, as a rule, fruit again this season, but next year will produce exceptionally heavy crops. They require deeply worked fairly rich ground, should be watered prior to planting, the balls must be buried well below the ordinary garden level, and have the soil very firmly packed about them. The rows should be not less than 3 feet apart, a distance of 2 feet dividing the plants in the rows. For a few weeks they will require to be kept well moistened, a mulching of short manure further serving to keep the old balls of soil and roots in the requisite moist condition.

FRUIT FORCING.

Peaches and Nectarines.—*Early Forced Trees.*—Continuous early forcing to ripen the fruit in May is a great strain upon the energies of the trees, as they have to make the growth during the early spring months, and mature it in early summer. After the fruit is all gathered, ventilate to the fullest extent, if possible removing the roof lights entirely by the early part of July, or earlier if the weather be hot and the trees sufficiently matured. If the roof lights are not moveable, in addition to full ventilation the border should be frequently damped and duly watered, so that no check is given likely to induce the premature ripening of the young wood and leaves. Keep the latter free from red spider by syringing occasionally, and if necessary apply an insecticide, as it is of the greatest importance that the foliage be kept healthful and ripen naturally. Laterals must be stopped, but where there is space to allow of growth being made without overcrowding encourage it, as a steady and continuous growth by promoting root action will prevent the buds and foliage maturing too early. All shoots that have supported fruit, and are no longer required, should be removed to admit light and air freely to the growths, and if there is too much crowding of the shoots for next year's bearing thin them well to make space for the free admission of light and air, and the action of water upon the foliage to cleanse it of red spider.

Houses with Fruit Ripening.—Gentle fire heat is necessary during cold nights and on dull days to admit of a steady progress, and the admission of air, a little constantly, to insure flavour. It is also necessary to assist the later varieties in swelling and finishing. Afford a moderate air moisture for the benefit of the foliage, and do not allow the borders to become dried and cracked, but afford water as required to keep the soil moist, and a mulching of rather strawy material will keep the surface in a condition favourable to the keeping of the roots active there, and that without undue atmospheric moisture. If the weather be very bright some netting spread over the roof lights will be an advantage in preserving the thin or delicate skinned varieties, such as Noblesse, from being unduly heated by the sun's rays, causing the fruit to ripen at the apex, greatly in advance of those on the lower parts, and the fruit not infrequently decays there through over-ripeness, whilst the lower part is scarcely fit for use. These, indeed all fruits, are better ripened gradually than roasted as is sometimes done under the large and clear panes of glass rightly employed in modern fruit houses. It is easy in a period of very hot weather to apply a double thickness of herring or a single thickness of pilchard net, which will sufficiently break the force of the most powerful sunlight, ensuring the fruit an evenness of ripening.

Young Trees.—These will have been disbudded, and the shoots regulated so that the principals will be 12 to 15 inches apart, and the shoots for next year's fruiting originated from the previous year's shoots disposed about 15 inches asunder along them, stopping them if requisite at 15 inches of growth, and the laterals to one joint as produced. The extensions or main shoots should be trained in their full length, provided they are evenly balanced. If the shoots on one side are stronger than the other depress the strong and elevate the weak, so as to induce an equal distribution of vigour throughout each tree. Any gross shoots may be stopped, as they are a great inducement to gumming. Trees marked by gross wood when young seldom turn out healthy, therefore it is better to cut out excessively strong wood, encouraging the short-jointed and sturdy. Ventilate early in the day, increasing it with the advancing temperature, avoiding a close vitiated atmosphere. It is essential that the growths be trained sufficiently thin to allow of the sun and air having free access, the growths being thoroughly solidified as made, the foliage kept clean and healthy, so that the buds may be duly supplied with nutriment and accumulation made in the adjacent wood of elaborated matter for the due setting of the blossom and the stoning of the fruit in the ensuing season.

Strawberries in Pots.—The outdoor fruit is late, therefore the resources of the cultivator will be taxed to make those in pots afford a supply of fruit until those in the open ground come in. Our latest supplies will be obtained from plants in a span-roofed structure used principally for wintering bedding plants, and from those on shelves in

wall cases. The Strawberry that has been most satisfactory with us this season has been Sir Joseph Paxton, which we use along with President for starting after the new year; La Grosse Sucrée, Vicomtesse Hericart de Thury, and Sir Harry or Keens' Seedling being put in at the same time. Noble is useful for forcing, as it sets and swells freely, is free from mildew, the fruit is of an even form and good size, and finishes well. Mr. Radclyffe and James Veitch are grown for their size. Sir Charles Napier is perhaps the most taking in appearance of Strawberries, and Marguerite is large and brilliant. For late use none rivals British Queen, Dr. Hogg, and Cockscomb.

PLANT HOUSES.

Chrysanthemums.—Plants intended for the production of large flowers will be growing and rooting freely in their largest pots. Supply water carefully, and syringe liberally twice daily when the weather is bright and warm. Side growths as they appear should be removed, and the main shoots secured to stakes or other supports as they extend. Aphides are very liable to attack the plants at this stage of their growth, principally in the points. The best remedy is to syringe lightly and then dust the affected parts with tobacco. This will destroy the insects in a short time, and the powder should then be washed out of the shoots by the aid of the syringe. Where loam in a moderately fresh state has been used for potting, grass will grow on rapidly; this can be kept down by constantly stirring the surface. It is bad practice to allow it to grow until it is large enough for pulling up. Plants potted at the same time and intended for bushes may have their shoots pinched back for the last time, or they may be allowed to extend without. The only difference will be taller plants by the last method and a smaller number of shoots, but better blooms can be secured. Length in the stems is of no moment with us, and therefore Elaine and all the early-flowering section will not be pinched again. Later plants will have all the leading points removed, inserted singly in 3-inch pots, and rooted in cold frames. Plants raised from cuttings now will be useful for decoration in 5 and 6-inch pots, with one to three flowers on the top of the stems. Pinch all intended for late flowering, and when they have started into growth place them in their largest pots. Cuttings rooted at the end of April in boxes and pinched are ready for placing in 6-inch pots. These will be pinched once after they are established in this size, and will then become dwarf and useful for furnishing purposes. Large bushes intended for supplying cut flowers need not have the whole of the shoots staked singly, four or five stakes at the most according to the size of the pots will be ample placed round the sides, sloping outwards. These can be supplied as opportunities present themselves; round these matting can be tied, so that the branches cannot be blown out or broken by the wind. As the plants grow another row of matting can be secured to the stakes, and so on until the end of the season, provided the stakes at first are long enough. This is an easier, quicker, and better method than trying to secure the plants to one strong stake; they are liable to be crowded by this method, but not by the other. The stakes and matting, if the plants are well grown, are at the end of the season hidden from view by their stems and foliage.

Hydrangeas.—Plants that have missed flowering of the varieties of H. hortensis should have the points taken out and rooted. These if taken near the top root freely in handlights under the shade of Cucumbers or Melons, in fact in any moderately warm close structure. If the cuttings are kept moist they will quickly emit roots from the stem on the surface of the soil. Place the cuttings in 2-inch pots, and confine them to these until they are mature. The object is to prevent their growing, so that when placed in their largest pots they will be furnished with leaves to the base when they flower. This cannot be accomplished if the plants are allowed to attain more than a few inches in length before the autumn. The plants from which the cuttings have been removed should be cut closely back. These if plunged outside without repotting them will make and ripen three or four sturdy short growths, each of which another season will bear heads of bloom.

Tree Carnations.—Carnations intended for autumn flowering will be growing freely in 6-inch pots. They should be plunged in a sunny position, and every care taken that the soil never becomes dry. Insufficient water brings the plants into a woody stunted condition, and instead of making abundance of growth they will be constantly producing flowering shoots. Any of these that may appear should be pinched off at once, and the plants encouraged to make as much growth as possible. The whole stock, except those rooted late, will now be better outside than in frames. Repot as the plants become ready, and be careful not to allow them to become root-bound before the work is done. Failure in the growth of these plants is often due to this cause alone. Watch for red spider, which is liable to attack the plants if once they become checked. The best and quickest method of eradicating it if it becomes established on the plants is to dip or syringe them thoroughly in a solution of water and sulphur, a 3-inch potful in three gallons of water will be ample for the purpose. Plants of Souvenir de la Malmaison placed in 6-inch pots early in the season, and with the centre removed as soon as signs of flowering were visible, will now be strong with from four to eight good shoots at the base, and may be shifted into 9-inch pots, and large specimens for next year's flowering will be the result. In potting press the soil moderately firm in well drained pots. Employ good loam, one-seventh of decayed manure, one-third leaf mould and sand. Do not feed these plants with strong stimulants.

Calceolarias.—Sow a little seed on the surface of fine soil in a pan. Do not cover the seed, but water gently with a fine-rose can. A square of glass should then be placed over the pan and damp moss on the surface. Place the pan in a cool shady frame until the seed germinates.

Rhodanthes.—The later Rhodanthes should be sown at once, and flowering plants will then be had in September. Sow the seed in 5-inch pots, lightly cover with fine soil, and stand them in a cold frame until germination has taken place. The soil may be watered and the frame shaded. Keep the seedlings in a cool situation.

THE BEE-KEEPER.

THE MANAGEMENT OF SWARMS.—No. 3.

In the old days when skeps were almost universally in use, it was comparatively easy to hive swarms, but by the use of frame hives some little additional difficulty has been occasioned. The swarm may be hived in any convenient receptacle, and although a skep is generally as convenient as anything else, a bucket, box, or something of a like nature may be used with equal success. Most bee-keepers know how to hive a swarm in the first instance, and it will therefore only be necessary to say that care should be taken to hold the skep well under the cluster, and to give one good firm shake rather than several feeble ones. If the queen falls into, or is placed in the skep, the bees will as a consequence also cluster within it, and bearing this in mind our only anxiety is to insure the queen's presence in the skep. The swarm will in a very short time, say twenty minutes, cluster in the skep, which should, immediately after the bees were shaken into it, have been turned right way up on a sheet, and the swarm will then be ready for hiving in its permanent home. When there is rank grass just under the clustering swarm a sheet should be placed beneath to save the bees not falling into the skep, when the twig on which the cluster rests is shaken, from tumbling into the grass and becoming entangled, and consequently being longer in rejoining the queen, and so delaying the final operation. Sometimes swarms cluster in very inconvenient places, and in such instances each bee-keeper must exercise his ingenuity in hiving them, bearing in mind that a feather dipped in carbolic acid, or a strong smoker, will cause a swarm gradually to leave any position which it may have taken up. When once the swarm has joined the queen the second part of the manipulation must be taken in hand, because the bees will very soon begin to work, and as they leave the skep will note their position and return to it. By removing the swarm to a new position these bees are compelled to return to the old stock, and as a result the swarm is weakened.

There are several ways of placing a swarm already hived in a skep into a frame hive, but perhaps the simplest, and in the hands of an unskilled bee-keeper the most certain, method is to fasten a sheet to the floorboard of the frame hive and to place a brick at each corner of the sheet where it touches the ground, thus forming a kind of gentle incline from the earth to the hive entrance. The hive itself may be raised an inch or more above the floorboard, and the bees must then by a sudden jerk be thrown from the skep on to the sheet. They will at once commence to run into the hive, and the swarm will very shortly be clustered within. The hive may then be allowed to fall into its proper position on the floorboard, and the manipulation is ended. If the bees do not begin to run up at once a handful or so may be placed at the entrance, when with a joyful hum they will tell the good news of a home found at last to those still remaining on the sheet, and the whole swarm will at once begin to move, and soon a vast continuous march of the thousands of happy insects will fill the bee-keeper with gladness, and make him certain of the success of the manipulation. There is, however, always a chance if the queen has not been seen that she has been left behind, and the swarm will then leave the hive and return in a body to the old stock; but provided that the queen has been secured, the swarm will not leave the hive unless the bees are compelled by some very untoward circumstance—such as great and unbearable heat—to seek a more comfortable home.

If an extra strong swarm is to be secured, then the hive containing the swarm must be placed in the exact position previously occupied by the old stock, and the latter must be placed in a new position. The swarm will then be increased in numbers at the expense of the old stock. Two things must be remembered in connection with hiving swarms as necessary to success :—

1, The presence of the queen is essential.

2, Moving the swarm as early as possible to the position it is intended permanently to occupy.

Swarms may be expected to issue at any time during this month if proper attention is not given to crowded stocks, and if through such neglect a swarm does issue, it is better, notwithstanding the desire of the bee-keeper to manage his stocks on a non-swarming system, to accept the evil rather than to attempt to remedy it by returning the swarm to the present hive. Such attempts are rarely satisfactory, are always risky, and are therefore unprofitable. Attention in the past will, to a great extent, prevent swarming in the present, and will insure, so far as it is possible to do so, a large harvest of honey in the future.—FELIX.

TO CORRESPONDENTS

*** All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Weevils on Ferns (*W. J. Winchester*).—The weevils sent are the destructive Otiorhynchus sulcatus, which seems to be unusually plentiful this year. You will find information respecting it in reply to two correspondents on page 500, last week.

Tacsonia (*W. S.*).—Judging from the specimens sent the variety appears distinct both in flowers and foliage. Are the whole of the flowers of the same character as the two sent? On hearing from you we will refer to the variety again.

Souvenir de Malmaison Carnation (*H. Coster*).—The blooms, 5 inches in diameter, are very good indeed, and half a dozen of such, produced by plants in 6 and 7-inch pots, indicate excellent cultivation. All the best Carnation growers thin the buds for obtaining superior blooms.

Oak and Elm Trees Bleeding (*W. M. D., Bucks*).—We fear you will have some difficulty in preventing the escape of sap from the trunks of your trees. Cement plasters might be tried, paring the bark to reduce the corrugations for the more effectual application of the cement. If any of our readers can suggest a better remedy, or point out a method they have found to answer in such a case, we will readily publish it.

Duchesse d'Angouleme Pear (*Alton*).—You ask if this variety is less hardy when blossoming than others, on the ground that your "two trees of it which flowered profusely cast nine-tenths of the flowers, while Beurré Hardy, Beurré d'Amanlis, Maréchal de Cour, Doyenné du Comice, and several others in the same row set too thickly by half." We have had similar experience in more than one season, and have been led to regard the variety in question as having somewhat tenderer blossoms than some others. This, however, may not agree with the experience of other cultivators, who may perhaps have something to say on the subject, and, if so, we shall be glad to hear from them.

Diseased Tomatoes (*An Old Reader*).—Your fruits are apparently attacked by a fungus described under the name of Sporocybe lycopersici, which causes the decayed spots and blotches at the crown of the fruit. Some practical growers, however, consider that it is occasioned, or at least facilitated, by imperfect fertilisation, and an examination of the fruits seems to confirm that view. Deformed fruits are caused in a similar way, as a deficient vitality leads to the attack of disease. Remove and burn all affected fruits, and it is probable, if the disease has not spread much, that the later fruits, fertilised under more favourable circumstances, will come satisfactorily. Do not allow too much moisture in the air.

Pansies (*D.*).—The yellow ground is very rich and the flower of good form, but the band of colour in the top petals not clearly defined. We can understand an earlier flower being larger and better, and even equal to some named varieties. The double flower is rich and good for garden decoration, but the petals are not smooth enough at the edges for exhibition purposes. We have a variety similar, if not identical, obtained from a packet of seed, and others from the same batch superior in form—more circular. We think the yellow ground the more meritorious, and it closely resembles the variety Evelyn Bruce. The Pinks apparently belong to the Dianthus deltoides group, but such fragments cannot be determined.

Grapes Shrinking (*W. H. G.*).—If there is no mildew on the Vines, and we fail to perceive any on the few berries sent, we conclude they are what gardeners term "scalded." Some Grapes are more tender and liable to injury in the early stages than others. On page 408 last week, it is stated that "Muscats and Lady Downe's completing the stoning process, should have air abundantly, sufficient warmth being kept in the hot-water pipes to maintain a night temperature of 65° to 70°, and 5° to 10° more artificially in the daytime, as if they are kept cold and close they are, if the weather prove bright, liable to scald." To this we may add, the danger is still greater if the ventilators are kept closed too long in the morning, then opened too widely at once for reducing the temperature. We have known a house of Grapes at the same stage as yours to be spoiled by one mistake of that kind on a Sunday morning.

Grubs in Strawberry Bed (*Swanehill*).—The grub sent is the larvæ of the Rose chafer—a beetle about three-quarters of an inch long, and shining golden green in colour, which deposits eggs in the ground in the summer, where maggots hatch from them and feed for two or three years. It is questionable if anything will destroy them without injuring the plants, and the best thing you can do is to prepare ground distant from the present bed, and if strong well rooted runners are planted now or early in July they will bear next year. By planting them a foot apart, or three triangularly at 2 feet intervals, we have had as many and as fine Strawberries the following year as from old established beds. You might try the effect of soaking the ground with clear lime water, ammoniacal liquor from gas works diluted with five times the quantity of water, or with soapsuds, into which a wineglassful of petroleum is briskly stirred in each gallon, keeping it off the foliage of the plants. Your safe course, however, is to establish a new plantation and destroy the old bed, digging gas lime into the ground thus vacated at the rate of a quarter of a pound to each square yard of surface, and not cropping for two or three months afterwards.

Irises not Flowering (*Cambridge*).—We presume your plants are German or Flag Irises, of which there are many beautiful varieties. Some of these are less vigorous and floriferous than others, but the great majority grow and flower well in fertile soil, and not heavily shaded or overgrown by trees and shrubs. When left undisturbed for several years large clumps form, these being composed of a number of weak growths that cannot flower, their weakness being the result of overcrowding, coupled with necessarily impoverished soil. Now, or whenever the weather is showery, well rooted divisions of the best offsets should be planted in free and fertile soil, made so by adding manure, if poor, and gritty matter if of a close heavy nature. Autumn or spring is the time usually recommended for planting, and is generally convenient, but if good divisions are planted now, kept fresh by watering as may be required, and spreading manure on the ground over the roots, a season will be gained in your case, as the plants would in all probability be strong enough in the autumn for flowering next year. We planted a number of moderate sized offsets last June, and they are now strong plants with stout stems bearing from three to six handsome flowers in colours as rich as Cattleyas and more diversified. There is a magnificent display of German Irises at Chiswick.

Early Peaches (*J. E. S.*).—You are quite right in regarding Early Beatrice as one of the most useful, though, as you say, the fruits are not large, though their size depends very much on the condition of the trees and the weight of the crop. The description of Alexander, for which you ask, is as follows ; it is larger than Early Beatrice, and we think the first that Mr. Rivers sends to Covent Garden :—"Fruit, about medium size ; round, with a well-marked suture, which terminates at the apex in a depression, in which there is a small point. Skin, completely covered with bright red approaching to scarlet where it is exposed to the sun, and this is coloured with broken streaks and patches of dark crimson ; on the shaded side it is yellow, slightly stained with crimson. Stalk, inserted in a deep and wide cavity. Flesh, pale yellowish white, without any stain of red even round the stone, to which it adheres firmly ; remarkably delicate and very juicy, with a fine briskly vinous flavour. Flowers, large. Leaves, with round glands, which have sometimes a tendency to be kidney-shaped. A very early Peach, which ripens in an unheated orchard house from the 12th to the 20th of July. Its only fault is being a clingstone, for its flesh is so tender it quite melts before it can be separated from the stone. It was introduced from America by Mr. Rivers, from whom Dr. Hogg received it in 1878."

Destroying Ants (*H. B., Leicester*).—We do not suppose the ants will eat the roots of your Melons, but if they form nests in the bed

they will injure them by displacing the soil. There are various ways of extirpating ants which are often injurious, though where they abound we suspect the presence of insects (aphides). A correspondent not long ago found that by half filling some smooth jars with treacle and water, and sinking these in the soil the ants were tempted in in shoals, and could not extricate themselves. Last year Mr. A. Douglas wrote in the Journal—"I can vouch for the efficacy of the following in the destruction of ants. Take a small quantity of cyanide of potassium, dissolve in a little water, in this solution saturate small flocks of cotton wool, then place them on the ant runs and round the nest. A few minutes' observation will convince anyone that this will only require to be repeated a few times to have the desired effect. Here, some time ago, we were overrun with ants, now we have only the nucleus of one small colony. Cyanide being a strong poison should be handled carefully." Mr. C. Collins caught many with treacle, without, however, materially increasing the number, then he placed hollow bones about their haunts, and finally procured cow's liver from the butcher, cut it into pieces, and laid them about the houses. The raw liver appeared to entice them, for they swarmed on to it, and by going round every hour or so with a can of hot water, and dipping the liver into the water when covered with ants he succeeded in exterminating them. "Delta" had a very fine Maréchal Niel Rose in a Fig house, and during last spring and summer a strong colony of ants made their abode at the roots. He tried every means he could think of to get rid of them, but failed, and at last he steeped some cotton wool in coarse petroleum, and laid it round the base of the plant over their abode. In two days they had all decamped, he knew not whither. Another correspondent had an attack of ants to deal with where he could not with safety apply boiling water. He discovered them eating the pistils of early Peaches, apparently not touching the stamens—in fact they went right down into the flowers after the embryo fruit as well. He laid some pieces of loaf sugar about, and lodged some up in the tree, and in a few hours he had the pleasure of seeing them leave the Peaches for the sugar, and were, of course, at once destroyed. He then placed a small quantity of moist sugar in a saucer at the foot of the tree, and every evening for a fortnight went once, and sometimes twice, and emptied them, sugar and all, into some hot water, baiting the saucer each time with fresh sugar. Result: saved the Peaches and exterminated the ants. By adopting one or other of the methods indicated you ought to succeed in either catching or banishing the troublesome ants.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*R. A.*).—The Peach you send is the Alexander, of which a description is published by request of another correspondent.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*G. H.*).—Cercis siliquastrum, the Judas Tree. (*W. H. G.*).—Specimen insufficient, perhaps Sempervivum calcareum. (*W. N. C.*).—Tragopogon pratensis. (*G. H.*).—It is a good variety of Odontoglossum vexillarium. (*B. R.*).—1, Polemonium Richardsoni. 2, Thalictrum minus. 3, Arenaria grandiflora. 4, Aquilegia chrysantha.

COVENT GARDEN MARKET.—June 20th.

Market quiet with good supplies. Prices generally easier.

FRUIT.

	s.	d.		s.	d.
Apples, ½ sieve	0	0	to 0	0	
Nova Scotia and Canada barrel	10	0		18	0
Cobs, 100 lbs.	45	0		0	0
Grapes, per lb.	2	6		3	6
Lemons, case	10	0		15	0
Oranges, per 100	4	0	to	9	0
Peaches, dozen	6	0		12	0
Pears, dozen	0	0		0	0
St. Michael Pines, each	3	0		5	0
Strawberries, per lh.	2	0		5	0

CUT FLOWERS.

	s.	d.		s.	d.
Abutilons, 12 bunches	2	0	to 4	0	
Anemones 12 bunches	0	0		0	0
Arum Lilies, 12 blooms	2	0		4	0
Azalea, 12 sprays	0	0		0	0
Bouvardias, bunch	0	6		1	0
Camellias, 12 blooms	0	0		0	0
Carnations, 12 blooms	1	0		3	0
Cowslips, 12 bunches	0	0		0	0
Cyclamen, 12 blooms	0	0		0	0
Daffodils, Double, 12 bchs	0	0		0	0
,, Single, 12 bchs	0	0		0	0
Daisies, 12 bunches	2	0		4	0
Epiphyllum, 12 blooms	0	0		0	0
Eucharis, dozen	3	0		6	0
Gardenias, 12 blooms	1	6		4	0
Lapageria, coloured, 12 blooms	1	0		1	6
Lilium longiflorum, 12 blooms	2	0		4	0
Lily of the Valley, 12 sprays	0	0		0	0
Lily of the Valley, 12 bunches	0	0		0	0
Marguerites, 12 bunches	2	0		6	0
Mignonette, 12 bunches	3	0	to	6	0
Pansies, 12 bchs	1	0		4	0
Pelargoniums, 12 trusses	0	6		1	0
,, scarlet, 12 trusses	0	4		0	6
Polyanthus, 12 bchs	0	0		0	0
Pyrethrum, doz. bunches	3	0		6	0
Ranunculus, doz. bunches	2	0		4	0
Roses, Red, 12 blooms	1	6		2	6
,, (outdoor), 12 bchs	6	0		12	0
,, (indoor), dozen	0	6		1	6
,, Tea, dozen	1	0		2	6
red, dozen (French)	0	9		1	0
,, yellow	2	0		4	0
,, (Moss), French, 12 bunches	6	0		12	0
Spiræa, bunch	0	6		1	0
Stephanotis, 12 sprays	1	6		3	0
Stocks, 12 bunches	1	6		4	0
Sweet Peas, dozen	4	0		8	0
Tropæolum, 12 bunches	1	0		2	0
Tuberoses, 12 blooms	0	6		1	0
White Gladiolus, 12 sprays	0	9		1	6
White Lilac, per bunch	0	0		0	0
,, ,, French	4	0		6	0

PLANTS IN POTS.

	s.	d.		s.	d.
Aralia Sieboldi, dozen	6	0	to 12	0	
Arbor vitæ (golden) dozen	12	0		24	0
Arum Lilies, dozen	6	0		12	0
Bedding out plants in variety, per dozen	1	0		2	0
Calceolaria, per dozen	4	0		9	0
Cineraria, dozen	0	0		0	0
Coleus, dozen	3	0		6	0
Deutzia, per dozen	0	0		0	0
Dracæna terminalis, doz.	30	0		60	0
,, viridis, dozen	12	0		24	0
Erica, various, dozen	9	0		18	0
,, ventricosa	18	0		24	0
Euonymus, in var., dozen	6	0		18	0
Evergreens, in var., dozen	6	0		24	0
Ferns, in variety, dozen	4	0		18	0
Ficus elastica, each	1	6		7	0
Foliage Plants, var., each	2	0		10	0
Fuchsia, dozen pots	4	0	to 12	0	
Genista, per dozen	0	0		0	0
Heliotrope, dozen pots	4	0		8	0
Ivy Geranium	4	0		8	0
Hydrangea, dozen	9	0		18	0
Lilies Valley, dozen	0	0		0	0
Lilium Harrisii, doz. pots	24	0		42	0
Lobelia, per dozen	4	0		6	0
Marguerite Daisy, dozen	6	0		12	0
Mignonette, per dozen	4	0		8	0
Musk, dozen pots	2	0		4	0
Myrtles, dozen	6	0		12	0
Nasturtiums, per dozen	4	0		6	0
Palms, in var., each	2	6		21	0
Pelargoniums, dozen	6	0		18	0
,, scarlet, doz.	3	0		6	0
Spiræa japonica, doz.	6	0		12	0
Stocks, per dozen	3	0		6	0

VEGETABLES.

	s.	d.		s.	d.
Artichokes, dozen	2	0	to 3	0	
Asparagus, bundle	1	0		4	0
Beans, Kidney, per lb.	0	6		0	9
Beet, Red, dozen	1	0		2	0
Broccoli, bundle	0	0		0	0
Brussels Sprouts, ½ sieve	0	0		0	0
Cabbage, dozen	1	6		0	0
Capsicums, per 100	0	0		0	0
Carrots, bunch	0	4		0	0
Cauliflowers, dozen	3	0		4	0
Celery, bundle	1	6		2	0
Coleworts, doz. bunches	2	0		4	0
Cucumbers, each	0	4		0	7
Endive, dozen	1	0		2	0
Herbs, bunch	0	2		0	0
Leeks, bunch	0	3		0	4
Lettuce, dozen	0	9	to 1	3	
Mushrooms, punnet	0	6		1	0
Mustard and Cress, punt.	0	2		0	0
New Potatoes, per cwt.	8	0		14	0
Onions, bunch	0	3		0	0
Parsley, dozen bunches	2	0		3	0
Parsnips, dozen	1	0		0	0
Potatoes, per cwt.	4	0		5	0
,, Kidney, per cwt.	4	0		0	0
Rhubarb, bundle	0	2		0	0
Salsafy, bundle	1	0		1	6
Scorzonera, bundle	1	6		0	0
Shallots, per lb.	0	3		0	0
Spinach, bushel	1	6		2	0
Tomatoes, per lb.	0	6		0	10
Turnips, bunch	0	4		0	0



RATES, TITHES, AND TAXES.

That the land is oppressed by a burden of taxation which it is unable to bear is an acknowledged fact. Relieve it of the burden, and both landlord and tenant will cease to feel the strain of agricultural depression in no inconsiderable degree. But how to do so is a question beset with difficulties, to the consideration of which attention is earnestly invited. If relief is possible by all means let us strive for it to the utmost, and at any rate get such remission of taxation as we can. Farms that are tithe free, and have the land tax redeemed, are few and far between; but even such favoured spots are not free from parochial rates and income tax, and upon most farms lies the incubus of rates, tithes, and taxes.

By way of example we may take a small heavy land farm of 160 acres which we have in hand. Last year the claims upon this farm were:—

	£	s.	d.
Poor rate	8	18	0
Highway rate	8	0	11
School rate	1	10	2
Income and land tax	9	13	10
Tithe rent charge	40	18	8
Total	£69	1	7

Or a fraction over 8s. 7½d. per acre. Now this farm came upon our hands three years ago from a bankrupt tenant "farmed out" in the fullest sense of the term, and notwithstanding our strenuous efforts it has not yet afforded a margin of profit per acre at all approximate to the charges made upon it. We are bound to admit that we have obtained a remission of income tax from Somerset House, at first only upon Schedule B, but now upon Schedule A also. It is important that this should be known generally, and we may usefully quote from Chapman's "Income Tax" that "The occupier of land, if at the same time owner, can claim relief if his profits fall short of his assessment. It is no longer necessary that he should gain his living principally by farming.

"The profits falling below £400 entitles the claimant to abatement as well as to relief on diminished income, and falling below

£150 entitles him to repayment of all tax paid, except what he has a right to deduct from payments he makes to others."

"In regard to lands, owners whose farms have been thrown on their hands, and from which no profits have been made, can claim back income tax, subject to the following conditions:—That farms usually held in hand be excluded, that the owner prove that he has unsuccessfully attempted to get a tenant on reasonable terms, and that the claim be made within twelve months after the expiration of the year of assessment."

It may, we hope, further assist our readers if we append a copy of the official appeal form which we use, and which surveyors of taxes are bound to receive.

INCOME TAX APPEAL UNDER SCHEDULE B.

PROPOSED STATEMENT.

Payments.	*Receipts.*
Live stock bought.	Live stock and wool sold.
Corn and seeds bought for seed.	Corn and seeds sold.
Feeding stuffs, oilcake, and manure.	Dairy produce and poultry sold.
Rent and tithes.	Other produce, including hay, straw, or roots when sold.
Rates, taxes, and insurance of farm stock.	Labour, stock, implements, &c., hired out.
Labour on the farm.	Value of farm produce used by household.
Tradesmen's accounts for goods supplied, or work done upon the farm.	
Sundries.	

FORM OF DECLARATION TO BE APPENDED.

I solemnly and sincerely declare that the amount of live and dead stock and produce upon my holding on* day of 18 did not differ materially for the purposes of this account from the average amount on the corresponding day of previous years († except in the particulars stated below, which are true to the best of my knowledge and belief).

PARTICULARS OF DIFFERENCE REFERRED TO ABOVE.

Description of stock and produce.	Increase.	Decrease.

Signature.

Date.

We have had copies of this useful form prepared for tenants of farms upon the estates under our management, which have proved most serviceable, for tenant farmers frequently find the preparation of a simple statement of fact a difficult matter. A close valuation for the declaration is unnecessary, an approximate one being sufficient for the purpose. We must, however, insist upon correct accounts being kept of every item of expenditure under the two headings of payments and receipts.

Farmers have been told recently that they have the option of being assessed under Schedule D instead of Schedule B, and they have been advised to avail themselves of this as an advantage. We consider such advice erroneous and misleading, simply because the assessment under Schedule D is unlimited, while assessments under Schedule B have advantages worthy of the close attention of farmers, and we cannot do better than advise our readers to get a copy of "Income Tax," published by Effingham, Wilson & Co., price 1s. in which useful little manual they will find explicit instructions for assessment, appeal, and return of tax.

It will thus be seen that relief is afforded from what is technically termed imperial taxation, but relief from parochial rates is a far more difficult matter; in point of fact such relief for individual cases may be said to be practically non-existent. The Assessment Committee generally consists of a certain number of guardians of each union, and although most of these gentlemen are farmers or landowners, they test the merits of any individual case by the value of land surrounding it, and not by its own value, so that if a farm which has been in bad hands falls upon the landlord in such low condition as to involve a considerable outlay upon which there is little if any profit for two or three years, he generally—almost invariably—has to pay rates upon an imaginary income. The reason is quite apparent, for if upon appeal he obtained relief, the rates would fall more heavily upon his neighbours, some of whom are probably upon the board of guardians.

Of the tithe rent charge, we can only say how urgent we consider the want of a general scheme of tithe redemption to be. Under its present conditions a feeling of antagonism between tithe owners and tithe payers is unavoidable, and it would be for the relief of all concerned if the land could be relieved from a burden which now not unfrequently represents an amount beyond what is possible to realise from our crops under present low prices.

* Name the day to which the accounts are made up.

† Strike out the words in the brackets if the amount is the average one.

WORK ON THE HOME FARM.

Frequent showers have imparted to the month very much of the aspect of a "dripping June," and notwithstanding the fact that we still have arrears of rainfall, yet the appearance of the crops is most satisfactory, and we may now indulge reasonable hopes of a year of plenty. The improvement in winter Beans during the past fortnight is certainly remarkable. At the end of May the plant was remarkably dwarf and just bursting into flower, so that a short crop was predicted; subsequently, however, the plant has "run" so freely that the crop has now an aspect of strength and fulness all the more pleasing because we have been able to render the soil thoroughly clean between the rows. Peas, too, are growing freely, the dark hue of the foliage showing the beneficial influence of manure. Autumn-sown Peas are also a good crop, and we were amused last market by two of our tenant farmers at our market stand. One of them had been telling us that his winter Peas were "off the flower," and were just showing pods, and he should have them picked when ready for sale as Green Peas. So early did he consider them that he gave vent to his anticipations of obtaining a high price for them. The other farmer, after listening quietly to all this, pulled out a handful of pods from his pocket with large peas in them ready for use. "Sangster's No. 1, sown last November," said he with a smile, and other man saw clearly that he was forestalled.

A little more Thistle hoeing has been done among late Barley, and some of the worst pieces of Charlock have been pulled by hand. After all we can eradicate Couch Grass, but Charlock can never be said to be finished. It is the pest of pests, and is our greatest robber of fertility from the soil; it seeds so freely that if only a few plants are left among a crop it quickly spreads far and wide again. Talavera Wheat is now richly in ear, so, too, is Rye, but the straw of second crop Rye will be short in length.

Root crops that have been singled are growing so freely that they will be well established before the haymaking becomes general. We hear complaints of the ravages of Turnip fly upon light land crops, but our own Swedes have been singularly free from them. Mangolds are a good plant generally, and are free from rampant weeds. Horse and hand hoes will be kept briskly going among them as long as possible.

OUR LETTER BOX.

Testing Milk (*G. B.*).—You may find a lactometer useful, but unless used with care it is apt to prove misleading. There is so much difference in the quality of milk that no positive quantity can be given, but it is certain that it requires from two to three gallons of milk for a pound of butter. This subject will be dealt with more fully in an early issue. We cannot undertake what you suggest at the close of your letter.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE. 1888. June.	9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of soil at 1 foot.	IN THE DAY. Shade Temperature. Max.	IN THE DAY. Shade Temperature. Min.	IN THE DAY. Radiation Temperature In sun.	IN THE DAY. Radiation Temperature On grass	Rain.
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday..... 10	30.023	61.8	55.2	S.W.	56.9	63.2	50.4	115.3	46.3	—
Monday..... 11	30.019	61.1	52.5	S.E.	57.8	71.6	44.6	115.9	41.8	—
Tuesday 12	29.795	67.6	59.4	S.	58.8	74.9	51.4	123.5	47.9	0.012
Wednesday.. 13	29.826	59.7	52.5	S.W.	59.2	69.4	48.1	121.2	41.8	0.064
Thursday.... 14	29.937	51.7	49.2	S.E.	59.3	62.9	48.3	108.4	44.5	0.243
Friday 15	30.031	53.9	50.8	S.W.	57.6	57.7	47.1	98.2	43.9	0.181
Saturday 16	29.904	55.3	51.4	N.	56.6	64.6	48.6	116.2	45.1	0.017
	29.946	58.7	53.0		58.0	67.0	48.9	114.1	44.3	0.521

REMARKS.

10th.—Fine and bright.
11th.—Bright and fresh.
12th.—Fine and bright till about 5 P.M., then cloudy and showery.
13th.—Bright and fresh.
14th.—Wet early, cloudy morning; thunder and lightning with heavy rain from 1.45 P.M. to 2.5 P.M., and from 4 P.M. to 4.15 P.M.; fair evening.
15th.—Showery morning; wet afternoon and evening.
16th.—Fine and bright; solar halo at 6 P.M.

A week of nearly average pressure and temperature. The night minima remarkable for their uniformity, the entire difference being only 4.3°.—G. J. SYMONS.

CUTTING AND PACKING FLOWERS.

ARE not many flowers cut too late, not in the morning alone, though that is a point not to be lost sight of, but at too late a period of their own short career? Since flowers are now so much in demand for the adornment of homes, not only of the affluent, but also, and happily, of the more or less humble, in whose gardens they may not be over-plentiful, it is of importance that they be kept fresh and bright as long as possible after they are arranged in dwellings. There are no rooms so richly furnished that are not made more attractive and home-like with flowers tastefully disposed, and none so lowly as to suggest that flowers in them are out of place; elaborate paintings might be, and certain works of art and vestments, but not flowers. Like rays of sunshine they clash with nothing; and neither the rich begrudge the poor, nor the poor begrudge the rich their possession. They cheer and gladden wherever they are, and the wish is natural with the great majority of persons to preserve the charms of flowers in dwellings as long as they can.

When that is the predominant object it is well to remember that each flower under the most favourable conditions has only a certain time to live, and that time is short. When allowed to develope fully, or nearly so, in the garden, half of its period of beauty is spent, and its term of freshness when cut is in that degree limited; or, in other words, the longer its garden life is, of necessity the shorter its room life must be. To have flowers fresh then, over the longest possible period after they are gathered, it is essential that they be cut when young—in the period of childhood, so to say, with nearly their whole life before them, for if left to attain maturity on the plants, their most sparkling, sprightly, juvenile career is over, and nothing remains but steady decline, a term of fading to the end. If pleasure is desirable, and undoubtedly it is, in watching flowers fade, because in instances innumerable they are only received when at their best, or past it, how much greater should the enjoyment be in observing them grow into beauty—seeing their petals unfold and their colours come without visible movement, yet not the less certainly, like light at the dawn of day? All flowers are, however, not so slow in developing; the Evening Primrose, for instance, which may be seen to open rapidly when the right moment comes. It passes from the bud stage to the full blossom, 2 or 3 inches in diameter, in about as many minutes. The interesting process of expansion can be heard, as well as seen, when the divided calyx flies back with a click. It is interesting to watch the birth of flowers, and if we would have them spend their whole life with us in our homes we must cut them on the eve of expansion.

Some kinds of flowers when cut in the advanced bud stage open as well in water as they do on plants, and last as long if not longer. They may not become quite so large as when supported with nutriment from the roots, but that is not a matter of the first importance. If form, colour, and freshness are combined, flowers answer all the purpose for which they are required in vases, and the prolonged term of beauty is ample compensation for a trifling deficiency in size. Everybody knows, or ought to know, that if spikes of the Gladiolus are cut and placed in water when the lower buds show colour all those above them will expand nearly or quite as certainly as if on the plants, only, as intimated, the flowers may be smaller. That circumstance is of great importance in packing, for not only can far more spikes be arranged in the bud than in the flowering state in a box, but in the former case there is no crushing of the petals in transit. It is the same with many other flowers, notably those with soft fleshy stems, but those with hard thin stalks are not amenable to the same treatment, while some again are naturally fugacious. The flowers of most kinds of bulbs cut young, when the first buds are expanding, last long in water, but Hyacinths and Narcissi are more durable, so to say, than Ixias and Freesias with their wire-like stems. Late Tulips are splendid flowers for large vases, whether in self colours or broken into flames and flakes: but if we wait until the blooms fully expand it is not easy to pack them without injury, while if they arrive at their destination uncrushed their beauty is of short duration, for the first and best half of their life has been spent in the garden; but cut them immediately the buds split and the first streak of colour is seen, packing is obviously easy, and if they are kept close in transit, so that moisture cannot escape from them, they expand in water with certainty and freedom, and continue attractive for a fortnight or three weeks. This year some buds were cut and placed in water in a room and the blooms expanded, keeping fresh even longer than those did that were left on the plants in the garden.

German Irises are magnificent flowers for vases, and are represented in a richness and diversity of colour scarcely excelled by any other flowers, while the gold and silver pencillings on lustrous purple and bronze red grounds are chastely conspicuous. But the flowers are large, and if we wait till all, or nearly all, expand on a stem before cutting, not only two or three dozen require a large box to hold them, and when removed from it after a day or night's journey, or both, they are not quite the same as when cut from the plants, and can never be made so; they may be freshened and have a gay appearance for a few hours, but their beauty at the longest is of short duration. Very different is the result when the spikes are cut when the first flowers are showing colour. In this form packing is of the easiest, the greatest number can be arranged in a given space, and placed in water without delay when unpacked, the buds then quite closed, open in succession, and no one will then say that "Irises pack badly and are soon over." Some vases filled with them a fortnight ago are attractive, yet simply because the spikes were cut young and the stalks not dried in transit from the garden to the receptacles they now adorn. Single blooms of Liliums, such as L. auratum or others, are very handsome in shallow dishes, which in various forms are so largely used as to have become "quite fashionable, you know." But how are the expanded blooms to be packed so as to arrive in the best condition after a long journey? It is a thankless task sending fully developed Lily blooms a long distance by road or rail, for the risk of injury is great, and at the best their beauty transient; but cut the buds when they open slightly at the tips, and they may be packed like cigars, each in a Lettuce or Spinach leaf, or embedded in fresh, but not wet, lawn mowings, and if the box is made practically air-tight it may be sent by post in the certainty that the flowers will expand when placed in water after twenty-four or even forty-eight hours' incarceration.

Roses sent from country gardens to city drawing rooms should always be cut young—just as the petals are unfolding; and when they travel in the daytime, as is most likely the case, they should be cut early while the dew is still on them, but not dripping wet, and if arranged so that they cannot be displaced in a close box in which the moisture is retained they will be as fresh when taken out several hours afterwards as when severed from the plants, and far fresher than thousands are before being sent off through having been cut too late in the day and too much expanded. Sent in the advanced bud stage and damp with dew they require no packing to keep them fresh, but something may be needed to keep them firm, and soft green leaves cannot be surpassed for this purpose. Paper, if not damp, should be kept from them, and dry cotton wool is an abomination. When buds open in the daytime, and

are not desired to expand on the plants, they should be cut and placed in water in a cool dark place, and they will be right for sending off the next morning. Exhibitors of Roses are quite aware of the advantage of cutting young blooms bespangled with dew, and of the necessity of placing them promptly in water instead of letting them "lie about" to become partially withered—a thoughtless habit on the part of some when collecting flowers for sending away, and fatal to their fresh arrival and long continuance.

Chrysanthemums for decorative purposes when cut in the expanding bud state and the stalks placed in water develope in rooms into most attractive flowers, and with a little care will there do duty for a month. The leaves should be removed from the stalks and flowers except above water, this changed occasionally before it becomes turbid, and a small portion cut off the stalks with a sharp knife for leaving open the sap vessels. If blunt scissors are used the sap vessels are bruised and rendered in a measure inoperative. Wet sand, obscured by foliage, is as good as water, if not better, for keeping flowers fresh, and a few can often be disposed to better advantage than in water alone, the sand holding them in the desired positions.

Some persons add salt, ammonia, and other ingredients to water for prolonging the beauty of flowers. I have not tried any of those supposed aids to floral longevity, and shall be glad to hear if they have been fully and fairly tested, and with what results. Hot water will freshen fading flowers and withering foliage much quicker than cold will, as anyone may prove by letting a number of Mignonette sprays get quite flaccid, then place some of them in cold and others in hot water. These latter will revive long before the others, some of which if very far gone may be beyond recovery in cold water, whereas the hot would have restored them. But how hot should the water be? If the hand can be borne in it for a quarter of a minute it will not injure the stems. This is an old practice, but none the worse on that account, and is worth a trial under the circumstances indicated.

Close-fitting tin boxes answer admirably for sending flowers in, and unless these are naturally moist it is well to give the boxes a rinse out, and the confined moisture will keep the contents fresh. Wooden boxes similarly treated also answer well if made as nearly air-tight as possible. That is the main point, for the simple and sufficient reason that without evaporation and the escape of moisture out of the boxes there can be no flagging in them if flowers and foliage be packed in a perfectly fresh state. Cut flowers young, cut them early, pack them quickly, and secure them closely, and the fresher they will reach those for whom they are intended, and the longer they will remain attractive when arranged in rooms.—EXPERIENTIA DOCET.

ABOUT FRUIT—TREES IN POTS.

Do you, or any of your readers, know a Pear called Blanche Claude? We have one tree here in a 10-inch pot from which we gathered a dish of fine fruits on June 9th. It was brought into heat along with others on February 23rd, and has therefore taken about fifteen weeks to ripen. As an early Pear it is a decided acquisition. The fruit is of good size, with a handsome greenish-yellow skin.

What a striking contrast there is at present between our inside and outside fruit. If anyone has doubts of the advantages of providing good orchard house accommodation in establishments where a supply of first class fruit has to be maintained, especially in localities so cold and backward as ours, a visit here at the present time would soon alter their views. Outside at the present time (June 22nd) Apples are just set, Pears not much further advanced; even the earliest varieties are not yet the size of marbles. We have had very cold cutting winds for some days past, the temperature seldom rising above 50° in shade, with a corresponding fall at nights. Inside we have dozens of Pears and Apples in pots laden with fruit in all stages. Many of the earliest varieties of both Apples and Pears are changing colour. Pears on trees in pots are very fine with us this season. I counted over three dozen fine fruits of Beurré Diel on a tree in a 12-inch pot. Trees of Pitmaston Duchess in a 10-inch pot carry seven fruits, each measuring 9 inches in circumference. Some fruits of Beurré Diel are 10 inches in circumference, and both these varieties are only half swelled. Souvenir du Congrès, Marie Louise, Marie Louise d'Uccle, Beurré Hardy, Louise Bonne of Jersey, and many others are also fine. It is remarkable what a weight of fine fruits can be taken from trees in comparatively small pots when placed in a position where they are exposed to light, never allowed to suffer for lack of water, with judicious feeding. The only stimulant we use here is Thomson's Vine and plant manure, the trees being dressed with it several times during the growing season.

AMERICAN BLIGHT.

If anyone is troubled with this destructive pest I would advise them to make up their minds to give their trees a dressing with tar and clay as soon as the foliage is off. Our Apple trees in pots were very badly infested with it last year, both root and branch. In winter we dressed each tree with the tar and clay mixture, and out of about 200 so treated on only one has the slightest trace of the pest been discovered, which can be kept in check till the coming winter, when we trust another application will finally eradicate this dangerous insect. The mixture was composed of five parts clay to one of coal tar. This strength will not injure the trees, as ours are clean and healthy and bearing fine crops. The surface soil is scraped off and a good dressing of soot and fresh lime given to kill any insects which may be on the roots. The tar mixture is applied with a hard brush, and well rubbed into every crevice, over buds, and every piece of wood. Half the remedy in this, as in most similar cases, depends on the thoroughness of the operation, and unless those entrusted with the task are determined to spare no pains in seeing that every bit of wood is well rubbed they had better be at something else. Have any of your readers ever seen this insect on any other tree but the Apple? I have not; though it has been scattered with the hose over Pears and many greenhouse plants, it never seems to take to any but the Apple.

I intend photographing some of the trees here shortly, also some bunches of Grapes. If they turn out well I will send you a few samples.—D. BUCHANAN, *Lambton Gardens.*

MY AURICULAS IN 1887.

(*Continued from page 506.*)

IT will thus be seen that very few of the earlier raised sorts—sorts that were in vogue thirty years ago—are now considered desirable or worthy of a place in a select collection. I now come to varieties raised since that period. Mr. Jeans, as we have seen, wrote of George Lightbody as not then out, but it came out shortly afterwards, and has remained to this day, notwithstanding all that has been done, the best Auricula in growth, and yet it is not perfect. One would like, as I said when I first saw it, a little more body colour, but take it all in all I have seen nothing that can yet touch it. Wherever it is exhibited in good form it is pretty well sure to take the first position in the classes for single blooms, and not unfrequently that for the best bloom in the show. I have not found it so vigorous as many other sorts, but neither is it a delicate grower. This variety was then, as we have seen from Mr. Jeans' note, on the border land between the old sorts which had been grown for fifty to a hundred years, and the newer varieties which we were told to expect with so much interest, but which now we are assured we must reject, and yet I think there are a few which one may hope will escape for a while at least this sweeping censure.

In the class of green edges there have been but a few flowers which can claim a prominent place. Some have been introduced, but they have not held their ground for one cause or another. For many years we were accustomed to see General Neill pretty often. It was a great breeder, and growers' stocks of it soon multiplied, but I do not think that it will be often found now in good collections. There was a common look about it, which was very unusual in the Auricula. Lord Palmerston (Campbell) was another fairish flower, but small, and with an indifferent tube, very prolific in producing offsets, but not holding a place now of much estimation. The Rev. George Jeans is another of Mr. Traill's flowers, only second rate. St. Augustine (Cunningham) has a bright paste and good body colour, but is goggle-eyed, deserving the cutting remark of a worthy friend of mine, who looking on it one day at the National Show, quietly said "Who canonised *that* saint?" Talisman (Simonite) is a flower with a good edge, tube, and body colour, but inclined to be a little coarse, yet it is a flower we cannot discard; and then there is that very favourite and still scarce flower Prince of Greens (Traill), in some points unexcelled, a beautifully bright green edge, very dark and solid body colour, but with, unfortunately, a dull light coloured tube; had it the tube of Richard Headly it would be a marvel of beauty. As it is it is very fine, and no grower would desire to be without

it, but this washy tube gives it a dead-alive sort of appearance; occasionally, too, the truss is sprawley, like a spider's legs, but not always so, and when at its best, fresh and clear in colour, it is pretty sure to beat any green edge in cultivation. I had a fine bloom of it this year. It is miserably slow in giving offsets, and this I have no doubt is the cause why it still keeps up its price, and why it is so difficult to obtain. I have had my plants of it for four years, and have never yet had an offset.

Grey edges are more plentiful than any of the other classes, and there are many really good varieties besides George Lightbody. There is first of all Charles Edward Bunn, his twin brother, for I believe they were both raised from the same pod of seed, and then without artificial crossing. This variety I have had this year nearly as fine as George Lightbody, and at times it does come so. It is a very vigorous grower and prolific, so that one rarely pots a plant of it without getting one or more offsets. As far as my judgment goes it is a variety well worthy of a place even in a select collection. Then there is Alexander Meiklejohn (Kaye) a very choice flower, with perhaps at times an uncertain edge. It is not always to be had good, and very few good blooms of it were seen this year. It has perhaps the fault that many seedlings have in their growth—inconstancy. Another variety I should not discard would be Dr. Horner (Reid). It is like most of Reid's flowers, refined in character without any coarseness. Another good though inconstant flower is John Waterston (Cunningham), with an undecided edge, sometimes white and sometimes grey. Colonel Champneys (Turner) is a flower which has not one good property. Taking it critically (except its vigorous growth), the tube is washy, the flower cupped, body colour very brilliant, but far too heavy, and with a "chiny" edge, neither white nor grey, yet the brilliancy of the body colour is sure to attract the uncritical eye, and "What a beauty!" is the exclamation with which it is generally favoured, and yet one cannot quite banish it, and a plant or two must be kept. Frank Simonite (Simonite) is a flower somewhat similar, perhaps a little better, but still with the "watery" eye. Ben says he thinks it is hardly possible to get the brilliant blue-black of this variety with a yellow tube. Robert Traill (Lightbody) I would not discard, although it seems to me to be difficult to get a good-sized truss of it. Then there is Richard Headly (Lightbody), which we may be sure the raiser thought highly of or he would not have dedicated it to his dearest friend. It is a beautiful and refined flower, but unfortunately very late, rarely coming in time for the shows. I was unfortunate with my plants, as I have said, this year, and on examining them I find a great deal of rottenness at the root, and I am afraid my fine plants are worn out, and that I must depend on offsets.

Of white edges we have had some really fine additions. Smiling Beauty (Heaps) is a very fine refined flower, and in some seasons is super-excellent. Then there is Traill's Beauty, one of the freest in growth and most prolific of all Auriculas, and one's frame soon gets full of it; but the greatest addition to the white edges, leaving out of sight the new ones, has been Acme (Reid's) although it, too, has its defects. It is for ever throwing offsets and weakening the plant, and it does not throw its truss as much above the foliage as is desired, but it has a most lovely edge, solid paste, and bright yellow eye, and is, I think, the best white edge in cultivation. It did not bloom well with me this year, and I think it was but poorly exhibited.

Passing on to selfs. Surely I am not, because we have three in Heroine, Sapphire, and Mrs. Douglas, to get rid of all our cherished selfs. Since the time I have alluded to we have had Campbell's Pizarro, which we used to think highly of; then there is brilliantly coloured Lord of Lorne, and still more brilliant Duke of Argyle, which both bloomed well with me, although the latter is delicate in constitution, and the brightness of the former of the two thus upon the stage makes it a most attractive flower. Then Charles J. Perry (Turner) is a brilliantly coloured blue flower, reminding one of a florist of bygone days. I had it very fine this year. Topsy, too, very dark and good at times, taking a high position, and very vigorous in growth. It may be exceeded by some of the new ones, but where are we to get these? and until that happy time comes we must fain cherish such flowers as Topsy and Charles J. Perry.

In recording thus my own experience during the last season, I have at the same time endeavoured to show that we are not to be quite so wholesale in our condemnation as some would have us to be, and that we unfortunates who are not in the "Auricula ring" (I do not use the word in any objectionable sense) must be contented with flowers which, after all, may prove equal to any of the new comers. Yet who can tell? The day may come when the Auriculas of the present day will be as little thought of as those of a century ago. I have before me a MS. list yellow with age, and quaint in its writing. To whom it belonged I know not, but it is dated March 15th, 1744, and contains about fifty varieties, some with very old names, Old King of Prussia, Charles III. of Spain, Quadruple Alliance, &c., and yet not one of these is now known. Some were marked with X as being extra fine; but, alas! they are gone. Who were the Herberts, Drovers, Uptons, Masons, Holts, Savages, &c., whose names figure in the list as raisers, no one can tell; and so, my dear fellow workers, it will be by-and-by with ourselves; the lists of to-day will be forgotten, and people will ask, Who were the Turners, Headlys, Traills, Lightbodys, Horners, &c., whose names are attached to this list? Ask some of our younger Auricula growers now, and they know nothing of Reid, the raiser of Market Rasen; of old George Lightbody, the retired paymaster of the Royal Navy; of Mr. Jeans, the genial and brilliant parson of Alford. So let us be taught humility! And while I thoroughly appreciate the labours of all engaged in this good work, I endeavour to console myself with the reflection that the flowers I have give me a vast deal of pleasure during many years.—D., *Deal.*

A CHAPTER ON TOMATOES IN THE OPEN AIR.

The other day an excellent judge of the flavour of Tomatoes told me he preferred fruit from the open air to that from under glass, because the former were decidedly superior in flavour. I could not argue on the point, as I am of the same opinion, and I believe all who have had the opportunity of testing the matter fairly are in favour of the open air fruit. Tomatoes are now so well known and esteemed that it has been generally found they are more than mere ornaments, and besides size and appearance, flavour has become an important character; indeed it is a leading feature, and if the fruits are best flavoured in the open air, this ought to be an additional inducement for their culture in this way to be taken up more and more. I am not surprised at anyone asserting open air Tomatoes are the best in flavour, as the Tomato is an air-loving plant. It never does well in a stifling atmosphere, and I never knew the flavour of any fruit to be excellent in an atmosphere that did not agree with the healthy development of the foliage. I have heard some say, "We do not need to trouble with Tomatoes in the open, we have plenty under glass." I do not agree with this. Tomatoes are no "trouble" in the open, and as to having pleuty under glass, that is doubtful, as I seldom knew anyone have too many Tomatoes, particularly in the open air, where they swell so well in August, September, and October. I know many instances where a great deal of attention is given to growing Tomatoes under glass, but where no attempt whatever is made to cultivate them in the open air, and open air culture is still far from general. No one can argue against it, but they have an impression that Tomatoes in the open air are uncertain, so that they are not worth trying; but this is utterly without foundation, and all who grow Tomatoes in the open in anything like a practical way will be highly gratified with the result. Do not treat them, however, as if they must fail, because when plants are grown under this impression many little attentions are withheld from them that would be given to others.

Another mistake with open air Tomatoes is to place out inferior plants as being "good enough to turn out." The fact is they cannot be too good, and the secret of securing early ripe fruit and plenty of it is to deal only with good plants. We have just placed out a number that have been carefully prepared. The seed was sown in March, the plants were potted as necessary, they were not overcrowded at any time, neither were they drawn up to unnatural dimensions, but by keeping them in the full light and plenty of air they retained a dwarf robust habit. They bloomed when about 1 foot high, and many little fruits were formed on them before they were placed out. By careful planting these have not received the slightest check, and they will go on swelling and ripen in July. By that time other fruits will have formed, and a constant supply will be produced all the autumn.

A plan we have followed with much success is to have the plants established in 8-inch or 10-inch pots and plunge these over the rim in the soil in the position the plants are to occupy. It is impossible for them to be checked in this way. The roots being confined causes the plants to form very short-jointed fruitful wood, and by the time a heavy crop has been formed the roots have run over the rim of the pots and through the bottom into the soil in which they are plunged, and from this they gain a stimulant which agrees with them admirably. We fruit Tomatoes in many corners in the houses in the spring months, but these often outgrow their place at this season. Some of them are thrown away, but the best are taken out, put into frames to harden off a little, and then the pots or boxes in which they are growing are plunged, fresh and profuse supplies of good fruit being soon obtained.

These three systems of growing them all merit commendation. By following them excellent crops are insured, and the result is greatly superior to any derived from backward plants. The other day I was

in a market garden. Some thousands of Tomato plants were growing in frames. They were about 1 foot in height and grown 3 inches apart. They were to be planted out in a day or two, but I question very much if they will ever prove a success, as being grown so close they could not be lifted with any soil to the roots. It would take them a long time to become established or make any progress, and I would undertake to secure more fruit during the season from a dozen well prepared plants than could be had from fifty such as those. Indeed our plants would be producing ripe fruit before these had formed any. I pay more attention to growing a few plants well than hosts badly. As a rule open air Tomatoes are planted in too much manure. Cultivators think that by using plenty of manure they are sure to secure plenty of huge fruit, but unfortunately this is seldom the result, as the plants make an enormous quantity of shoots and form very few fruit. Tomato plants are always most fruitful when of medium strength, and as their disposition is to make wood rather freely they will make it of medium strength in what some would regard as a poor soil. I would rather grow them in a very poor soil than in a very rich one, as when in the former they fruit most freely, and it is always an easy matter to give liquid manure and rich top-dressings to assist the crop.

In cold and backward districts they will not ripen well unless planted at the bottom of a wall, fence or house, and trained up to face the sun ; but in many other parts of the country they may be grown as standards or bushes. In the latter case they should be planted from 2 feet to 3 feet apart, and be staked and tied up from the first. It will never answer to allow them to scramble about on the ground for a time, and the growths should be trained from the beginning. The one-stem system is the only one likely to succeed with standard plants. Every side growth should be pinched out before it has attained a length of 2 inches. There is no danger of the main stem running up too far. It is only when it is surrounded with superfluous side growths that it gets out of proportion and fails to produce clusters of flowers and fruit at every joint. Plants trained against walls may be allowed to form two or three main stems, but not more, and the side shoots must be kept closely pinched off each. Do not on any account neglect this from the first ; it is a mistake which no after attention will remedy.—A Kitchen Gardener.

DIGGING AND STIRRING THE SOIL.

(*Continued from page 482.*)

Turning over soil with a spade is different from stirring or digging to the same depth with a fork. In digging with the spade the soil is turned upside down in rectangular masses, and however rough it may be left it is much more solid, therefore less exposed to the action of frost, consequently less pulverised and aërated than soil dug with a fork, which breaks it up far more than a spade does. The soil derives most of its fertility from the atmosphere, consequently the rain and air entering solve stubborn material and evolve by the decomposition of substances therein the elements that support plants. The disintegration and divisibility of the soil is best effected by the fork. It leaves the soil lighter, and is not so soon resolved again into the solid form. Better still, the fork effects a more even tilth, and the crops are more regular through the more even permeation of the soil by the roots, the food of which they are in quest being more generally diffused and assimilated therein. The work, too, is more readily effected by a fork than spade. Where the ground is foul with couch or Bindweed, or other description of weed requiring extraction, it is more surely effected with a fork than a spade, the latter being a direct means of multiplication of the soil. So convinced must all be on trial of the great advantages of a four-tined steel fork over a spade for general digging, that the lighter and better cultural implement has or will supersede the more laborious and less efficacious spade.

Respecting the time of digging, it is unquestionably best done when the ground is dry. It is difficult to turn up some soils after spring or summer crops for the rotatory ones, in some instances almost impracticable, with a spade, from the ground being, as the workmen say, "dry and hard." This, however, apart from the increased labour entailed, is the very best time to break up the soil. No matter how hard and dry it will yield to the fork, it may be in narrow breadths, and need a determined will, but it gets such a breaking up as to let in more sun, more air, and more nutriment is abstracted from the atmosphere in a day of summer than in a month of winter. If anyone doubts this let a trial be made. So enriching is digging the ground after spring or summer crops in preparing for autumn or winter ones, that some cultivators prefer to plant in the solid or firm unbroken soil lest the crops should grow too luxuriantly, and so become tender, unable to withstand the rigour of winter frosts. This is explained on the lines that the plants forming the crop root less slowly in the firm than in loose soil, and the growth is more sturdy and better solidified. Non-stirring may in measure preserve the fertility of the soil for future crops, but it is doubtful if not more is lost through the surface being in so firm and close condition as to derive little of the enriching influences of the atmosphere. Firm soils are, of course, well-known cultural aids in the prevention of gross growths, alike from the mechanical condition of the soil and the resistance offered to the roots there is less food available, and what is gained one way is lost the other, so that to make up the deficiency mulchings are given, which supply at given periods an increased supply of nourishment and promptly by its exposure to the full influence of the acting atmospheric air and moisture, which has been so studiously prevented acting by the firm close condition of the soil. The hard surface so much clamoured about in respect of fruit culture is the most distressing to growth and disastrous to crops during drought. The soil literally bakes and cracks under powerful sun, being quite as free in evaporation without the advantages of absorption of night dews, as where the surface soil is loose and open to a depth not interfering with the roots. Mulching, of course, prevents evaporation in a sense corresponding to a loose surface of ameliorated soil with the advantage of affording enrichment, attracting the roots to the surface, and the value of mulchings equally with the soil's surface depend on their lumpiness or porosity. Lumpy manure is better in every way for mulching through its freely admitting air and moisture than a close heavy mass which excludes air and rain, becoming soapy and impervious. Therefore, whether the object is to encourage growth or to sustain it, we must have a surface that will allow of the sun's warmth, the dew, rain, and air passing into it, which must of necessity be a loose one of ameliorated soil if benefit to the full is to be derived by the crops from the assimilated matter in the soil through the prevention of evaporation.

Stirring the Soil.—A practice used to obtain in gardens of stirring the soil with a fork in addition to the ordinary digging in of manure in autumn. In the case of heavy soil there was the indispensable turning over of ground that had been thrown up roughly for the winter so as to bring it into an even surface preparatory for cropping. In some cases it was considered necessary to turn over vacant ground whenever the opportunity offered, and rare indeed were crops put in without stirring the soil a few days before, especially if it had lain awhile so as to become at all solid. It was done to sweeten—*i.e.*, aërate the soil, and that it had a beneficial effect was amply proved by the crops that followed—the more the ground had been stirred the better the result. The stirrings certainly had the effect of mixing manures thoroughly with the soil, cleansing it of weeds, disturbing predatory pests, and producing a good tilth. Those practices are now almost obsolete. Why ? Is it because land pays better tilled to produce 3 to 4 quarters instead of 4 to 6 up to 8 quarters of corn per acre ? Can it be that cross-ploughing, dragging, cross-harrowing are needless operations ?

Ground should never be dug or stirred when it is soaked with rain or very wet, and ought never be worked when it is frozen or covered with snow. Whenever the soil is so wet as to clog it is not in a fit state for digging or stirring. This more particularly applies to heavy or clayey soil, as that of a light nature or that resting on a gravelly bottom may be worked at most times with facility, yet digging and stirring is best performed on all in dry weather, and never ought to be practised on any other than when somewhat dry or in good working order. Ground that needs aëration is perhaps more favourably treated with a certain degree of moisture and tenacity existing. All the same working ground when wet converts it into puddle, and gives it a solidity unfavourable alike to pulverisation and aëration.

Stirring Soil about Growing Crops.—The object in this case is primarily to destroy weeds—to retain the resources of the soil for the benefit of the crop, as weeds equally derive their support from the soil. Every weed that is allowed to grow up with the crop proportionately deteriorates its value. How much the value of grain crops are depreciated when seen as masses of yellow because of Charlock or a blaze of scarlet through Poppy is seldom calculated, and a growth of couch almost if not equally strong with the cereals takes correspondingly from the quality and quantity of the resultant grain. Hoeing is a necessity of cleanliness, and it has the advantage of not only preventing weeds interfering with the food supplies of the crop, but keeps them from growing with and choking the useful plants, which must be kept sturdy, and need all available light and air. As soon, therefore, as the crops are sufficiently advanced the ground should be stirred, run over with a hoe whenever the ground is in a fit state, which it always is when it does not clog. To work it when wet is only to make it more firm or close and impervious to rain and air. The only time, therefore, for stirring with a hoe is when the soil works well. It is useful in spring, summer, autumn, and winter, whenever and wherever there are weeds to destroy and a surface that is becoming close to loosen

It is a modified sweetening of the soil, and its value to autumn and winter crops is mainly resulting of aëration ; hence to stir the soil between the rows of Lettuces, spring Cabbage, and winter Spinach is invigorating. Paradoxical as it may seem, stirring is good against winter cold and summer heat—*i.e.*, plants in an aërated soil are not nearly so injuriously affected by cold, nor do they suffer to anything like the same degree from drought as those growing in a soil the surface of which is close. Stirring, of course, should never be practised longer than is safe—*i.e.*, it must not be persisted in when damage is likely to be done to the roots of the crop plants. Whenever the crops are above ground the hoe should be set to work at once, the weeds not being allowed to get beyond the seed leaves, and the hoeings should be followed up as required to keep the weeds well under and have the crops perfectly clean until it is impracticable to continue the stirring on account of certain damage to the tops and roots. Deep stirring is, of course, sometimes necessary to insure soil for earthing Potatoes, and even forking, &c., between the rows being had recourse to on heavy soils, when it is desirable to form a free-rooting medium for the plants, it being done in advance of the roots. The stirring is an essential of successful practice. In autumn and winter it is necessary to allow the rain and air to enter freely, and for evaporation, which if it tend to reduce the temperature of the soil one way is counterbalanced the other through the less danger from cold of the light aërated surface as compared with the close and wet ; indeed, the open loose surface of ameliorated soil is some degrees warmer, which assists crops in winter or cold periods to resist cold. The well-stirred surface is equally effectual against drought through the increased depth of the ameliorated soil, which is a great absorbent of heat, of rain, night dews, and air, the latter being the best of non-conductors ; hence plants growing on land with a good surface of loose ameliorated soil are not so liable to injury from cold or to suffer from the vicissitudes of our climate as those in a soil which does not dry quickly after rain, if indeed the rain instead of entering the soil must run off or lie to be evaporated. The soil must be sweet and clean, rain and air must pass into and through it, and the plants kept clean and healthy, which can only be had by stirring the soil both before and after cropping in order to secure the fullest, earliest, and best quality produce.—G. Abbey.

THE FLORISTS' TULIP IN THE SOUTH.

I do not think that I am committing any breach of confidence when I state there is a warm desire on the part of a few of the leading Tulip growers in the north that the florists' Tulip should be again grown and exhibited in the south. But how can this interest in the flower be aroused, in the London district for instance? It is not easy to purchase good florists' Tulips, indeed they are now almost altogether in the hands of private growers, and the choicest sorts increase but slowly. It is true that the Dutch florists offer late show Tulips—bizarres, roses, and byblœmens ; but I fear it would be difficult to find one among them that could pass muster at a Cheshire or Lancashire Tulip show. It is a waste of energy, time, and money for anyone to trouble to cultivate these in the hope of finding among them flowers up to exhibition form, unless, indeed, a new generation of southern growers were to make the attempt with flowers of a low type of quality, which would be a misfortune.

I think I might go a step further and say (although I do it with due reservation) that I think the President of the Royal National Tulip Society at Manchester, Mr. Samuel Barlow, J.P., will be found willing to co-operate, not only in a hearty, but also in a practical manner in the direction of endeavouring to raise up a new generation of Tulip growers and exhibitors in the south. When at Manchester recently, I had an opportunity of talking over with him the matter of a Tulip revival in the south, and the idea that seemed to be present in his mind was this—that he would be willing to give, from the overflow of his beds, a collection of choice Tulips to anyone in the south willing to undertake their cultivation, provided they would be willing to hold a competitive exhibition at the proper season. I do not wish this to be taken as absolutely authoritative until some announcement of the kind is made by Mr. Barlow, but I think it will shortly appear. He informed me, in course of conversation, that he was on the point of supplying a few of the florists at Reading who grow Auriculas, Carnations, and Picotees so well, with collections of Tulips, their desire being to hold a competition with them at the spring show of the Reading Horticultural Society, which is generally held about the third or fourth week in May. But were a larger southern circle interested, and especially were they set up with bulbs in some such generous way as that I imagine to be in the mind of Mr. Barlow (and I think there would be a combination among some of the northern growers to render assistance), it would both be possible and highly beneficial to hold an exhibition in connection with one of the meetings of the Royal Horticultural Society. This is the period of floricultural revivals, and a movement that reaches the florists' Tulip is, I think, possible, probable, and highly desirable.

The question is, What sort of Tulips may be said to be procurable? I think I may go to the length of stating that the following are fairly plentiful in the midland districts and the north :—Bizarres, feathered.—Sir Joseph Paxton, Masterpiece, Commander, Lord Lilford, Garibaldi, Sir Sidney Smith, a variety with a heavy or "plated" feather ; Royal Sovereign, George Hayward, and William Willison. Bizarres, flamed.—Sir Joseph Paxton, Ajax, Dr. Hardy, Masterpiece, Orion, and William Lea. Roses, feathered.—Mabel, Heroine, Modesty, Industry, Charmer, Annie McGregor, and Aglaia. Roses, flamed.—Mabel, Annie McGregor, Madame St. Arnaud, Rose Celestial, Triomphe Royale, Aglaia, and Lady C. Gordon, only that in the case of the last named it is so difficult to bleach the base clear of the yellow that so often taints it. Byblœmens, feathered.—Talisman, Friar Tuck, Bessie, Adonis, Martin's 101, and May Queen. Byblœmens, flamed.—Friar Tuck, Talisman, Chancellor, Lord Denman, Adonis, Duchess of Sutherland, and William Parkinson. Breeder Tulips, bizarres.—Excelsior, Horatio, Sir J. Paxton, Richard Yates, and Dr. Hardy. Roses.—Mabel, Annie McGregor, Miss Burdett Coutts, and Mr. Barlow. Byblœmens.—Talisman, Glory of Stakehill, George Hardwick, Martin's 117, and Alice Grey.—Tulipa.

STENOGASTRA CONCINNA.

An attractive little stove plant is that bearing the above name, though it is by no means so showy as some of its relatives in the Gesnera family. But the interest of plant houses does not solely depend upon occupants with large or brilliant flowers, and sometimes a neat little plant like this Stenogastra is quite as much admired as those of more striking character. It is not a common plant, but is occasionally seen flowering in the Royal Gardens, Kew, and from that establishment

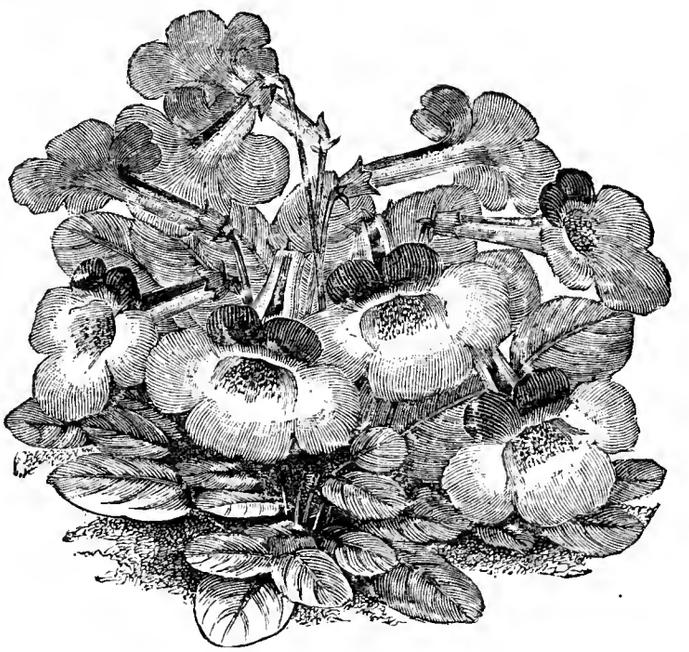


Fig. 74.—Stenogastra (Isoloma) concinna.

some time ago a specimen was shown which is depicted in the illustration (fig. 74). The leaves are small and oval, the growths short, and the flowers rise in slender stalks only an inch or two above the soil. They have a narrow funnel-like tube, with an expanded limb of five lobes—the two upper very dark purple, the lower a lighter shade of purplish lilac and white, a dark stripe running down the upper part of the tube outside, and inside are numerous dark spots. Flowers are produced freely, and clustered over the plant have a pleasing appearance.

Under a somewhat more euphonious generic name this species is ranked by several modern botanists—namely, Isoloma, to which several other species, previously regarded as of distinct genera, have also been added. An example of this is Isoloma hypocyrtiflora, which has been called Hypocyrta brevicalyx, Gloxinia, and Pearcea. Stenogastra, or Isoloma concinna, is a native of India, whence it was introduced in 1861, and the plant thrives in moderate heat in a compost of light turfy loam, peat, and leaf soil, or the two latter alone will suit it.

SELECT ALPINE PLANTS.

GENTIANA ACAULIS.

My own ideas of a really good alpine are not based upon any particular plant or plants by reason of its rarity, or because it does not lend itself readily to the various modes of culture to which it is subjected in our English lowland gardens, nor yet because it is necessary to get on one's hands and knees to see its beauty. I much prefer showy plants, such, for example, as Gentiana acaulis.

This grows and flowers freely in most places, except where cold stiff clay abounds, on this it will not thrive. For twelve years I have been endeavouring to induce some apparently healthy tufts to produce flowers, but in vain. Certainly there has been a flower or two, but not in its usual way, while in the same bed the Helleborus niger vars. Dodecatheon Jeffrayanum, Campanula carpatica pallida, Iberis, Anthericum Fair Maid of France, Horminium pyrenaicum, Gaillardias, Phloxes, and the like grow to perfection, to say nothing of standard and dwarf Roses in abundance. The only plant which evidently will not thrive is this Gentian, and I believe it thoroughly dislikes the soil. I have grown it to perfection on light sandy soil overlying gravel, on soils overlying the red sandstone, on a good sound loamy soil, and in beds of American plants, and the difference was very trifling either in growth or flower. Such a plant as this, then, must be one of the best. I have planted it at all seasons from September to June inclusive, but I give preference to the month of October, paying special attention to firm planting at all seasons. It is surprising how well this Gentian does for edging beds or walks in the garden, and how well it flowers when used for the purpose named. I have this impressed on my memory by the fact that some sixteen years ago the specimen Phlox beds at the Exotic Nurseries, Tooting, were edged with it, and by reason of the traffic to the Phloxes they became as firm in their positions as the paths themselves. The Phloxes were copiously supplied with water, consequently the Gentians came in for a share, and flowered with the greatest freedom. From this apparently trivial circumstance I learnt the lesson of firm planting, which I now adopt for all Gentians having any inclination to produce stoloniferous growth, such as G. excisa, G. alpina, G. verna, and its forms.

ARNEBIA ECHIOIDES.

"The Prophet Flower," undoubtedly the finest spring-flowering Alpine in cultivation, but I have seen it as good in October as in May, which inclusive embraces a lengthened period for flowering. Given a free light rich sandy loam it will quickly establish itself without difficulty, and has no equal amongst Alpines either from a decorative point of view or for exhibition purposes, while for spring gardening when sufficiently plentiful it will be excellent. It is a remarkably interesting plant by reason of the characteristic changes through which its flowers pass in the earlier hours of their expansion. When first open the flowers are of a pleasing shade of soft yellow, but on the second day a dark blotch appears on each of the petals, which eventually become black; afterwards they gradually fade, and ultimately disappear altogether. In well flowered examples these varying stages may all be witnessed at one time. I have found by experience that it is not nearly so impatient of removal as some may imagine, though let it alone by all means if this course can be adopted. The methods of increase are threefold, and if each of these can be carried on successfully a stock may soon be raised—namely, by dividing the stools, by seeds, and by root cuttings. The first named is best done in early spring, and will need to be done carefully, shaking all the soil away previously, so that an opportunity may be afforded for examining the stool and see where division can best be made. Pot the plants and place them in a cold frame, taking care to shade from sun till well started into growth again. Seeds may be sown at any time as soon as ripe; but with regard to these I may say that they are not usually abundantly produced from young plants, while established clumps will produce them in a manner verging on freedom. The root-cutting operation can only be performed in winter and very early spring when the plants are at rest. It is a native of the Ural Mountains, and when established attains a foot or 18 inches high, a very suitable height for rockery or herbaceous border. I first made its acquaintance some eight years ago in that richly stored garden then presided over by the Rev. H. Harpur Crewe at Drayton Beauchamp Rectory, Tring, where it merely figured as a unit among a host of choice and well cared for plants.

CHEIRANTHUS ALPINUS.

This Alpine Wallflower should be a common plant for spring gardening, for it is easily managed, and furnishes bright pleasing masses of colour which always satisfy. It is a really good alpine, flourishing in any good ordinary soil, clay excepted. For the rockwork in large patches it is most effective, and equally so on the flat surface of a bed. In height it is about 8 or 9 inches, and spreads into compact tufts, which in turn are completely covered with soft sulphur yellow flowers, a colour which in fact forms a good imitation for the Arnebia were it not for the presence of the spots on the latter. The Cheiranthus is readily increased by cuttings taken in July, which should be torn off with a heel attached and inserted in sandy loam. In the cutting state they are impatient of moisture, and succumb to it quickly, so that an old light or frame into which abundance of air can be admitted forms the best place to root them. A close moist atmosphere they cannot endure. A good stock of it may soon be had from seeds, which are produced somewhat freely, and these sown as soon as gathered will, with good culture, make fine plants by the autumn. An excellent companion plant is C. Marshalli, with rich orange-coloured blossoms. It is not such a free grower as C. alpinus, hence its comparative rarity.—J. H. E.

(To be continued.)



ROSE SHOWS IN 1888.

June 28th.—Brockham and Ryde.
„ 29th.—Maidstone.
„ 30th.—Colchester and Reigate.
July 3rd.—Bagshot, Canterbury, Diss, and Hereford.
„ 4th.—Croydon, Dursley, Farnham, Hitchin, and Richmond (Surrey).
„ 5th.—Bath, Farningham, and Norwich.
„ 6th.—Sutton.
„ 7th.—Crystal Palace (National Rose Society).
„ 10th.—Gloucester, Ipswich and Oxford.
„ 11th.—Ealing and Tunbridge Wells.
„ 12th.—Birmingham, Carlton-in-Lindrick, and Winchester.
„ 14th.—Eltham, Manchester, and New Brighton.
„ 16th.—Christleton and Newcastle-under-Lyne.
„ 17th.—Leek and Ulverstone.
„ 18th.—Birkenhead.
„ 19th.—Helensburgh.
„ 20th.—Darlington (National Rose Society).
„ 24th.—Tibshelf.

In the case of Birmingham, where the show extends over two days, the date of the first day's exhibition only is given.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

ROSE PROSPECTS.

THE Roses about here look like being very much later than usual, I hope Christmas will not intervene before the blooms come on, but if the present cold biting east wind continues much longer I expect Christmas will be here first. The early foliage of my Roses is pretty well shrivelled, owing evidently to a wave of frost at a recent date. This has put the growth back and given a severe check to everything. The leaves of all the trees in the neighbourhood seem to have suffered in the same manner, and no doubt from the same cause. It is probable that the east wind, of which we get the full benefit at 1000 feet above sea level, has helped matters in this direction. However, I look forward to a fine autumn show of bloom.

HER MAJESTY.

Some time ago I wrote saying I had a hundred of these planted out, and that I had pruned a few down to the ground, the bulk being cut about 1 foot to 15 inches only. These latter I find are carrying a lot of bloom buds. The shorter pruned ones being later, in consequence of the treatment, are not yet showing many, but I expect they will bloom freely, just as Baronne de Rothschild or Merveille de Lyon does. The foliage of Her Majesty is superb, more beautiful than either of the two Roses just mentioned.

A ROSE ENEMY.

If your correspondent "H. V. M." will procure a dark lantern and a white cloth, and will visit his Rose trees about eleven o'clock at night, he will find them swarming with weevils, which seem to be taking a benefit this year, though I have none. The cloth should be spread on the soil, and then if he is not squeamish he can crush a good many of his enemies with finger and thumb; leather gloves are cleaner than bare hands. Those that fall on the cloth must be attended to before they crawl away. Two or three visits on different evenings will get rid of the whole lot.

THE PERSIAN YELLOW.

I have a thicket of this charming little Rose in my garden. In its lasting qualities it is a good deal like the foam on the river we read about—

"A moment seen, then gone for ever."

I have once or twice attempted to cut a branch or two to place in water, but the flowers fade and die almost at once. Possibly I did not place them in water soon enough. My trees are now about to burst into bloom, at which time they are a lovely sight. There is no doubt about its being hardy, as it grows and increases here just like a wild Briar. It requires no pruning, the simple removal of the old wood being not even necessary. Generally speaking, the wood made the preceding season carries a bloom springing from each bud. I am not sure whether the variety growing here is Harrisoni or the old Persian Yellow; one of

these is hardy, the other not. From the fact of the relatives of my plants having been growing here in an old garden close by for many years, I presume it is Persian Yellow.—D. GILMOUR, JUN.

CLIMBING DEVONIENSIS.

WE have growing here against a south wall a very fine specimen of Devoniensis Rose, and I write to ask if we were to have it photographed if you would accept a copy for the Journal? If so, I shall have much pleasure in sending one. It is a tree of rather unusual size. Its length is 38 feet and height 8 feet, with nearly 400 blooms on it (open), and I should think quite as many buds. The tree is the admiration of all who see it.—C. SEDGBEER.

[We cannot possibly undertake to engrave from photographs without seeing them, and possibly the one suggested may not do justice to the Rose. We do not request that one be specially taken for us, but if you have one taken for yourself we shall be glad to see a copy.]

ROSES IN WINTER.

DURING the early months of the year the temperature in the first and second division should not by fire heat exceed 55° at night, and even a few degrees lower during severe or very cold weather will be much better for the plants. In fact, the most successful results in Rose-forcing are attained by regulating the temperature according to external conditions. When forcing is conducted on these principles the temperature may range from 50° to 60°, the latter only on mild occasions, when no harm whatever will result. It will be found that when the thermometer stands at 45° outside, the house would naturally stand at the intermediate temperature given without the aid of artificial heat. During such nights the pipes should be kept gently warm, even if the temperature exceeds 60°. Thus the higher temperature, instead of doing harm, will prove beneficial to the plants. The temperature during the day will vary considerably according to the weather, often rising to 85° or 90° at the end of March and the following month. No attempt is made to lower the day temperature by opening the ventilators. Although the temperature by sun heat often rises higher than is really desired very little harm follows; but, having to choose between a high day temperature or ventilation, we practise the former, because of the two evils it is much less likely to subject the plants to injurious results. The principal objection to ventilating early in the season is the danger of giving the plants a check, and if cold air is allowed to rush in upon the plants they are certain to be attacked by mildew. If the house is provided with side ventilators that do not fit closely it will be near such positions that the first signs of mildew are visible.

A high temperature from sun heat, as long as abundance of light can reach the plants, will not result in soft weak growth unless hard firing at night is resorted to. Whether the plants are young or thoroughly established do not ventilate until the weather outside is genial and the air warm. From the middle of April a judicious system of ventilation may be followed. Let it be remembered that very frequently after that time the house is better closed than open, for cold days often succeed a few warm genial ones. If care is taken until the close of May I shall be safe in saying a free and liberal use of the ventilators may be made. Artificial heat may be dispensed with by the end of May, except on solitary occasions, when the night proves exceptionally cold. On all fine warm days, whether they are in March, April, or May, artificial heat should not be used when the temperature can be kept high enough without it. Considerably more harm is done in Rose-forcing by a too free use of artificial heat than by sun heat, however high the temperature may rise.

In June, when the temperature externally is warm, too much air cannot be admitted to the plants, for the object to be attained is firm, hard, thoroughly matured wood. I advised moveable lights for the roof, and if the house is constructed on this principle I do not advise their removal the first season. Good Roses can be grown without this accommodation, and I should not have referred to the matter again had not inquiries been made on the subject. It is not really necessary, but two advantages are gained by this method of construction that cannot well be overlooked. The first provides for the maturation of the wood in a natural manner, and the plants entail less labour to keep their foliage free from red spider. Under glass Tea Roses will persist in growing, and early forced plants have the peculiarity of starting vigorously into growth in autumn when they should be at rest or going to rest. When they are covered the whole season with glass, rest, to a great extent, has to be forced upon them by drying the soil at their roots, and other devices that I do not approve of. The cooler days, especially nights, of late summer and early autumn naturally bring them to rest. Being exposed, the first early frost that may be experienced has the desired effect. They start, when required to do so, with greater freedom after exposure to frost than if protected from it by glass.

The second reason is a very important one, especially to those engaged in growing for the market. It is scarcely necessary for me to point out what could be grown by the aid of the sashes. Even to the private gardener rude frames that could be covered with lights would be found invaluable for the culture of many plants, for frame room is seldom too plentiful in the majority of gardens. If the lights were to be taken off and stored away, then it is useless to go to the extra cost that would be necessary in construction. But I must return to the plants, and consider them from the time they are freely ventilated and artificial heat dispensed with. Whether they have been flowered or not in their early stages makes very little difference with their treatment from this time, for the whole of the buds must be kept off as they appear. The plants will be strong, for they should have pushed up luxuriant growths from the base, and others will still continue to make their appearance. Two weak growths that the plants possessed when they were placed out, or when they were restarted into growth, may be cut clean away, so that light and air can penetrate freely to the stronger ones that issued from the base. On these strong growths good flowers the next season should be produced. Those who want buds only and in quantity in preference to finer but fewer flowers, may leave these weak growths to be carefully thinned out at pruning time. Amongst a number of plants some may not have pushed so freely from the base as others. I have to-day been looking at some that have developed what we may call their first shoots, no growths having issued from the base. In such cases no pruning in the present stage should be done.

Those restricted to the culture of the Rose in pots for flowering at the period of the year we are considering should transfer the plants at the end of May or beginning of June into at least 10-inch pots. If on their own roots 9-inch pots will be large enough for the plants. In potting do not disturb the ball farther than the removal of crocks from the base. Pot about half an inch deeper; that is, cover the surface of the old ball with about half an inch of fresh soil. If potting is done carefully the plants will receive no check; and if kept under glass until the middle or end of August, and then placed in a sunny position outside to harden, they will be in admirable condition for forcing.—WM. BARDNEY.

(To be continued.)

MEREWORTH CASTLE.

THIS, the Kentish residence of Lord Falmouth, is situated close to the main road from Maidstone to Tunbridge Wells, and in one of the most picturesque localities of the "Garden of England." The castle is an ancient building of massive appearance, no attempt having been made to embellish the exterior of it with carvings, projections, or elaborate stone facings. The first glimpse we caught of it from the woodland drives beyond conveyed the impression of imposing grandeur, the large central dome having a striking resemblance to that of St. Paul's. The castle and flower garden around it were at one time bounded by a moat, of which only a deep excavation remains on three sides, the other being still beautified by the clear waters of a broad running stream. From many parts of the grounds delightful views are obtained of the undulating and diversified scenery for which Kent is justly famed. For miles around may be seen the fruitful orchards, climbing Hops, and verdant pastures, with here and there a tall church spire amongst clusters of trees, or standing boldly out, as if to serve as a landmark from the hills beyond.

My object in visiting Mereworth was to inspect the gardens rather than admire the surrounding scenery; I will therefore relate the impression I formed of them during a few pleasant hours I spent there on June 1st. The flower garden is of considerable extent, the principal portion of it being around the castle, and is laid out in the Italian style, the beds being enclosed in Box edgings with gravel walks between. These beds are in some cases somewhat intricate in design, but as the curves are glowing and graceful have doubtless a very good effect when planted; but the principal defect of such designs being there is not sufficient breadth for masses of colour, which are always so telling when the surrounding features are on a large and bold scale. Great changes are, however, contemplated in this department. The Box edgings having through age become somewhat tall will another season probably be removed, the whole space turfed down and suitable beds cut in the grass, which will doubtless prove a vast improvement. On one side of the castle a curious design is worthy of notice. It very much resembles an old Gothic window, and is worked out in Box with gravel between, none of the enclosed spaces being planted. The design was taken from a very old drawing, and must have required a considerable amount of both skill and patience to draw out and plant accurately. At the time of my visit bedding-out was being pushed on, the principal plants being Pelargoniums, Lobelias, a few annuals, and Tuberous Begonias, the latter being especial favourites, 1000 plants being raised this year, the stock of plants altogether being about 2588. Of Messrs. J. Laing's splendid strain this year the best varieties are selected, and I noticed a fine stock of sturdy plants coming on in frames. Near to the flower garden is a rosery, surrounded on three sides by flowering and evergreen shrubs, several fine specimens of Coniferæ and Berberis Darwini being noticeable. The Roses which were lifted a couple of seasons ago were making vigorous and healthy growth, and promise to give an abundant harvest of their fine blooms.

KITCHEN AND FRUIT GARDENS.—Leading from the Castle to extensive woods beyond is a fine broad drive of imposing appearance running straight as an arrow for a mile in length, and then slightly curving for another mile. On either side of a part of this drive the gardens in question are situated, and a close inspection of them shows plainly that they are under the management of one who has been trained in a good school of gardening. Close cropping, the absence of weeds, and the systematic manner in which the various crops are arranged, speak for themselves. As far as the gardens extend the drive is margined with grass about 6 feet wide on each side; next the grass are two grand lines of tree Pæonies upwards of 200 yards in length, studded with flowers, just beginning to open when I saw them, and which, doubtless, have a very striking effect when fully expanded. Beyond the Pæonies on either side the principal portion of the vegetables are

grown, and in planting particular attention is paid to have each side correspond as nearly as possible to the other.

The whole of the vegetable crops were in a very promising condition, a fine bed of Ellam's Early Cabbage and another of Broccoli being especially noticeable. The heads were of medium size, solid, and in excellent condition for kitchen use. The vegetable quarters are bounded on both sides by well built brick walls, which are being rapidly furnished with Peaches, Nectarines, Pears, and Cherries, the trees being remarkably clean, healthy, and well trained, and the varieties comprising most of the best in cultivation. Among Peaches Gros Mignonne, Stirling Castle, Bellegarde, A Bee, Dymond, Barrington, Princess of Wales, and Alexandre Noblesse are held in great repute. Nectarines Elruge, Lord Napier, Pine Apple, Pitmaston Orange, and Humboldt. Among the numerous varieties of Pears grown the following are found the most satisfactory—Marie Louise, Doyenné du Comice, Beurré Superfin, and Glou Morçeau. Many of the walks are edged with dwarf horizontal cordon Apple trees of such large and useful varieties as Emperor Alexander, Red Astrachan, Celini, Golden Noble, and Reinette de Canada. The outdoor fruit trees at Mereworth are a very fine collection, and as they are all young, and in the majority of instances well set with fruits, they will produce many fine specimens during the summer months. The fruit houses are numerous and admirably adapted for the purpose for which they are intended. A close inspection of these houses is amply sufficient to show that Mr. H. Markham, Lord Falmouth's skilful and energetic gardener, is an adept at fruit culture, and as he was at one time a pupil of Mr. H. W. Ward at Longford, and at another of Mr. R. Gilbert of Burleigh, it must be gratifying to these prominent gardeners to know that the sound practice he acquired while under them has been turned to such good account.

The vineries are four in number, the Vines in perfect health and carrying good crops of fine compact bunches, such as are in great demand for keeping up a regular supply, and in many cases the bunches promise to be such as might with advantage be placed upon the exhibition boards, in which case many of the Kentish growers must look to their laurels, or they may be deprived of some of their usual victories. The earliest house is occupied solely by Black Hamburghs, from which the first bunches were cut in May, all of them being well coloured, the berries large, and in many cases the bunches too. All the Vines in this house are young, and between the permanent ones pot Vines have been grown for this season, to be taken out and planted elsewhere as soon as the crop is cleared, and it was a noticeable fact that the Grapes produced on the pot Vines were equal in any case, and in many superior to those on the permanent ones. Another house is occupied principally by the same variety, which is a great favourite on account of its good flavour. The Vines in the Muscat house are carrying an exceptionally fine lot of bunches, which have set as freely as Hamburghs, in fact I have never seen a better set, many of the bunches promising to be fine solid specimens. At one time the berries shanked badly, but in 1885 Mr. Markham lifted the Vines and relaid them in fresh soil, carried them on very slowly the following year without loss of the crop, and took up a young cane to each rafter so as to stimulate root action; since that time they have been rapidly improving, till they are now in the highly satisfactory condition above described. I should mention the excellent set obtained is attributed in a large degree to the fact that when in flower the bunches were lightly syringed between five and six o'clock every evening. In the late vinery Lady Downe's, Gros Colman, Gros Maroc, Muscat of Alexandria, and Golden Champion; the last named variety produces good bunches and berries, but it generally becomes spotted when ripening, which could probably be prevented if a house could be devoted exclusively to that variety, by ventilating more freely and keeping a drier atmosphere.

Three houses are devoted to Peaches, the whole of the trees being in splendid condition, the training being perfect, and the fine crops of fruit such as anyone might be justly proud of. Last year many of the fruits weighed 8 ozs., and they promise to be equally fine this, the varieties being Hale's Early and Royal George. In 1884 Mr. Markham planted the other two houses with good sized trees, which now cover a space of trellis 14 feet by 14 feet, and are carrying from ten to twelve dozens of fruit each, Waterloo and Grosse Mignonne occupying one house, the former being a great favourite on account of its ripening six weeks earlier than any other variety in the same house. At the time of my visit the fruits were colouring rapidly, and were a wonderfully fine even crop of good sized fruits, although this variety is generally considered a little undersized. Grosse Mignonne is considered here to be unsurpassed for quality. Stirling Castle and Bellegarde are the varieties planted in the other house, and cover the same amount of space as those previously mentioned. All the fruit houses are three-quarter span, the back walls and half-span portion of the roof being occupied by Figs either in pots or planted out, those in pots being the most fruitful. Only one variety of Melon is grown—Green Gem being the favoured one on account of its exquisite flavour. The same plants are grown throughout the summer. A few fruits have already been cut, and between forty and fifty were still hanging, which were a very fine lot, averaging from 2½ to 3 lbs. in weight, and I was particularly struck with the regularity with which they were distributed over the plants and the fine healthy condition of the foliage.

Strawberry forcing is a specialty at Mereworth, 2000 plants being grown in pots, and two houses are devoted to them during the forcing season, and it is questionable if a finer lot of fruits can be seen anywhere, grand solid fruits of very large size, and being well exposed to the light throughout ensures good colour, and makes them the better travellers when ripe. As soon as the fruits are set the leaves are fastened back by means of a strong peg, and the fruit supported with sticks, the arrangement being extremely simple and effectual. Sir Charles Napier is the sort almost exclusively grown, a few of La Grosse Sucrée being tried this season with good results. No plants whatever are allowed in the fruit houses, which admits of the fruit trees receiving the attention they require without the cumbersome inconvenience of a host of plants beneath, which only too often harbour colonies of insects so detestable to fruit growers, and also prevent the pressing work of stopping and tying the shoots and thinning the fruits from being carried out with that expedition that is so necessary. Two houses are devoted to plants, Bougainvillea glabra and Plumbago capensis being thickly trained over the roof, the beds and stages being occupied by a mixed collection of useful plants, conspicuous among them being healthy thriving specimens of Adiantum farleyense and A. gracillimum. —VISITOR.



EVENTS OF THE WEEK.—Rose Shows to be held during the ensuing week will be found on page 530. Thursday (this day) is the date of the Royal Horticultural Society of Ireland's Show. On Monday, July 2nd, the Kettering Show will be held. Next Wednesday is the Forty-fifth Anniversary Festival of the Gardeners' Royal Benevolent Institution, at which the Right Hon. Joseph Chamberlain, M.P., will preside—the date also of the Royal Botanic Society's Evening Fête. The Richmond (Surrey) Horticultural Show will also be held on the same day, in addition to the Croydon Show, so that metropolitan horticulturists will have a rather busy time.

—— RETIREMENT OF PARTNERS.—Messrs. Sutton & Sons, seed merchants, of Reading, and 5, Westminster Chambers, S.W., announce the retirement by effluxion of time on May 31st last of Messrs. Martin Hope Sutton and Alfred Sutton, who have been members of the firm for more than fifty years. The firm of Sutton & Sons will be continued in future under the same style and title by the sole proprietors, Messrs. Martin John Sutton, Herbert Sutton, Arthur Warwick Sutton, and Leonard Goodhart Sutton, who have for several years past been the acting partners.

—— THE WEATHER.—Rain has fallen copiously this week in the metropolitan district, and as a high temperature has also prevailed the conditions are favourable for plants recently bedded out and the growth of crops generally, but not for haymaking, and most of the Grass is "down" in the south.

—— At a meeting of the ROYAL BOTANIC SOCIETY, Regent's Park, held on Saturday, the Duke of Teck, President, in the chair, the Duke of Newcastle and Mr. F. Meeking were elected Fellows. After the ordinary business had been disposed of, the President presented a gold medal and purse of fifty guineas to Mr. Ellis, L.R.C.P., of Liverpool, the winner of the Queen's Jubilee Prize, given by the Society for the best essay upon the plants and vegetable products introduced into the United Kingdom for use in the arts, manufactures, and for food during her Majesty's reign.

—— THE BEGONIA EXHIBITION OF MESSRS. JOHN LAING AND SONS at Forest Hill is open to the public every day, Sundays excepted, from the present time till the end of September. The collection of Begonias in pots is richer than ever, both doubles and singles being represented in splendid varieties, while new colours are being produced in each successive batch of seedlings. The plants now flowering are remarkable for their sturdy vigour and massive blooms; and eventually, when the 150,000 plants, occupying upwards of an acre of ground in the open nursery, are in full beauty the sight will be worth a long journey to see. Caladiums are now a feature, and the Orchids will bear examination. Catford Bridge station, reached in half an hour from the City, is only about half a mile from the nursery.

—— THE CRYSTAL PALACE.—Music and flowers are more closely associated on the Continent than in this country as a rule, but there are exceptions. During the past and present week the grandest of musical

entertainments have been provided at the Crystal Palace in the triennial Handel festival, and during the season the series of horticultural exhibitions will rank with the best of the year; but music has just now the pre-eminence. The general rehearsal of the choirs last Friday, the famous "Messiah" on Monday, the grand selection on Wednesday, in which some 4000 trained vocalists and instrumentalists took part, including those of world-wide fame, will not soon be forgotten by the vast concourse of visitors. The festival closes on Friday in this week with the great Oratorio "Israel in Egypt." The Palace and grounds are now looking well, and illuminated at dusk the spectacle is a brilliant one, and worthy of inspection by gardeners and others visiting London during the summer months.

—— Referring to Rhododendron Fortunei Mrs. Butler, recently noticed in this Journal, Mr. G. Aslett writes that it was certificated by the Royal Horticultural Society, May 9th, 1882, and the specimen is now 10 feet high, 6 or 7 feet in diameter, and has had hundreds of blooms this season.

—— The York Show.—We are informed that a full report of this Show was posted to us on the 19th inst. It did not reach this office; and a second report arrived too late for insertion this week, so there ends the matter. We cannot occupy our space with reports of shows three weeks or a month after date.

—— Mr. Henry V. Machin, Gateford Hill, Worksop, Nottinghamshire, writes:—"One of your readers asked, a week ago, if anyone would inform him with what success they had grown Mushrooms in a disused ice-house. I beg to inform him that I had a bed spawned at that time in an ice-house. The inside measurement of the house is about 14 feet by 9 feet 6 inches. I had some disused beer coolers about 11 feet by 3 feet 6 inches, and have made my beds in them and other receptacles. I can only inform your correspondent that, although my beds are 11 and 9 inches deep, I am very much pleased with the show of Mushrooms."

—— An exhibition of plants, cut flowers, fruits, and vegetables will be held in the Palace Grounds, Wells, Somerset, on August 15th. Classes are provided for groups of flowering and fine-foliaged plants, Fuchsias, Begonias, Liliums, and Ferns, and fairly liberal prizes are offered for cut Roses, Dahlias, Gladioli, Asters, and other cut flowers. A special feature is to be made of table decorations, and there are also classes for all kinds of fruit and vegetables in season. It is open to all comers. Mr. R. Harris is the honorary Secretary.

—— National Co-operative Flower Show.—In reference to the above Exhibition to be held this season in the Crystal Palace, Sydenham, Mr. Broomhall sends the following note:—"The Council of the Royal Botanic Society, in communicating with the Secretary of the National Co-operative Flower Show, states, 'That although it does not come within the province of the Society to offer or award medals or prizes other than at its own exhibitions, and has never done so, yet in consideration of the special features of your national festival and exhibition the Society will be pleased to add one of its large bronze medals to your list of prizes.' We understand that the medal will be offered for the best collection of botanical specimens."

—— Hardiness of Choisya ternata.—A correspondent writes: "It is not generally known that this beautiful shrub is quite hardy—at any rate in the southern counties—or otherwise it would be more frequently planted out. At Rood Ashton, Trowbridge, Wilts, there is a fine specimen in the pleasure grounds that Mr. Miller states was planted eleven years ago. It is on a sloping bank facing south-west, and is sheltered by other trees and shrubs from the coldest winds. The height of this specimen is fully 9 feet, and the front of it measures 12 feet through. During severe winters much of the foliage gets browned somewhat, but the points are uninjured and never fail to flower abundantly. When I saw it about the middle of this month much of its beauty was over, and the young growth fast pushing out. At its best it must have been very beautiful, the flowers being nearly as pure white as on those plants grown in pots."

—— Some time ago we had the pleasure of inspecting the interesting and admirably kept gardens of John Crosfield Esq., at Walton Lea, near Warrington. The magnificent specimen Hollies in the pleasure grounds and Camellias under glass were the most striking features, and we must travel far to find their equals, though every department affords evidence of the ability and attentiveness of Mr. William Kipps, the gardener. We are reminded by a report in a local paper that Mr. Crosfield allows his neighbours to share the pleasures of his garden, and not only invites residents of the busy town and neighbourhood in hundreds from time to time to his pleasure grounds, but entertains them when there as personal friends. One of these garden parties have recently been held, the guests consisting mainly of persons engaged or interested in elementary education in the district, and teachers and pupils found much to admire and something to learn on this occasion. Such kind and thoughtful acts are worth recording in these columns.

—— The Rev. Hugh Berners, Harkstead Rectory, Ipswich, desires us to announce that the Ipswich Horticultural Society's Show will be on Wednesday, July 11th, instead of Tuesday, the 10th, and that the schedules can be obtained on application.

—— Earwigs.—A correspondent, "M. A.," desires information on preventing injury by earwigs by destroying their eggs. We suspect the chief difficulty will be in finding them, but perhaps some of our readers may be able to say something on the subject in question.

—— Mr. T. Grant, The Gardens, Ossemsley Manor, Christchurch, writes:—"I can fully endorse your correspondent's remarks on page 511 of your last issue with regard to the Caucasian Laurel. Four years since, when enlarging the pleasure grounds here, we planted in a mixed shrubbery a large quantity of them, which have grown very freely, forming thick compact shrubs of intensely dark green foliage, and not only have they withstood the frosts of winter, but during the drought of last summer they shed but little foliage, while the other variety was in some instances nearly bare. I find that they also bear transplanting very well. Out of some dozens we moved during the planting season of 1886-87 we lost but very few during the late dry season."

—— Souvenir de la Malmaison Carnation is grown on a scale that is equalled in few private establishments at Dover House, Roehampton. Nearly 1000 plants are cultivated in pots solely for yielding cut flowers, of which immense numbers are gathered. The variety is an especial favourite with the proprietor. But Mr. Morgan not only likes abundant supplies of his favourite flower in the rooms of his residence, but also to present to visitors—charming "souvenirs" indeed. Hence, though the blooms are produced in thousands, they are not too numerous. The majority of the plants that have been flowering during the past few weeks are two and three years old. They were from layers made in summer, the plants being pinched back and not allowed to flower, but potted as required in loam, peat, and sand. Some three-year-old plants were fine bushes, with thick woody stems, and bearing twenty or more blooms each.

—— Another interesting sight in this garden at the present time is a House of Tomatoes. The structure in question may be described as a three-quarter span-roofed pit, the plants being grown in large pots and trained up the roof. Cutting commenced the second week in May, and abundance of fruit is now ripening. Only one variety is grown—Hackwood Park Prolific—and it has been found so good as to be relied on absolutely, its only fault being a slight shyness in setting. It is not often that a better house of Tomatoes is seen than this, nor is it every day that a garden is entered in which all departments bear so strong an impress of able superintendence. No model garden could be kept more scrupulously clean and orderly, and this result is not gained by the sacrifice of the satisfaction derivable from first-rate crops.

—— Alexandra Palace Rose Show.—The Exhibition arranged for June 27th and 28th was opened on Wednesday, but owing to the late period at which judging commenced we are unable to give the awards. There was a fair number of entries, but the blooms generally seemed rather the worse for the storm on the previous day, though good examples were found in several stands. A large portion of the space was occupied by groups of plants and flowers not in competition, comprising an extensive collection of choice stove and greenhouse plants from Mr. B. S. Williams, Upper Holloway, similar groups from Messrs. Hooper and Co., Covent Garden, and Messrs. Cutbush & Son, Highgate. Mr. May, Edmonton, had a fresh and pleasing group of small Ferns and Crotons, while Mr. T. S. Ware, Tottenham, contributed one of the most tasteful groups of hardy flowers he has shown this year. Very conspicuous amongst these were mounds of the white, orange and yellow

varieties of Papaver nudicaule, surmounted by the bright Lilium chalcedonicum. Several exhibits of horticultural sundries also occupied considerable space.



A WELL-FLOWERED ORCHID.

In one of the plant houses at Fairlawn, Frome, the residence of John Baily, Esq., there is a fine piece of the good old Oncidium divaricatum beautifully in flower. It has four strong spikes, the best of them being not less than 4 feet in length. All are branching nearly throughout the entire length, and 750 flowers were counted well expanded at the same time. No special treatment has been given to nor is required by this Oncidium, the plant under notice being grown in company with a few other serviceable Orchids, with a mixture of Crotons, Dracænas, and Eucharises in an ordinary plant stove.—I.

ONCIDIUM LANCEANUM.

A specimen under the above name has been flowering most freely in one of the houses at Fairlawn for the past three weeks. The floriferous condition of this plant and its value for cutting or decorative purposes may be estimated from the fact of its producing on four branching spikes the large number of 756 blooms of a yellow and brown colour. The longest spike measures 6 feet in length and branches within about a foot from the soil.

It is growing in a mixed plant house, and has received but ordinary treatment, a fact that should commend itself to the notice of persons who are not favoured with special accommodation for these highly desirable plants. It appears to belong to the same strong-growing section as O. sphacelatum and O. altissimum, which are of strong constitution, and consequently of easy culture. It is adapted to pot or basket culture, and revels in abundant supplies of water when provided with good drainage and an open yet substantial compost.—W. S., *Frome.*

EPIDENDRUM ATRO PURPUREUM VAR. RANDI.

This plant was shown at the Drill Hall on Tuesday last as E. Randi both by Sir Trevor Lawrence and Mr. F. G. Tautz, but the Committee determined it to be a variety of E. atro-purpureum, though flowers of the latter brought by the gardener, Mr. Cowley, for contrast were very distinct in form as well as colour. The variety has light brownish lanceolate spreading sepals and petals slightly undulated at the margin, which is of a paler colour. The lip is 1 inch broad, white, with two broad expanded lateral lobes, the centre one rounded streaked with crimson in the centre, a few similar streaks also being noticeable at the base of the lateral lobes, partly concealed by the broad flat column. The plant shown had a raceme of seven flowers, each over 2 inches in diameter, long narrow dark green leaves, and small conical pseudo-bulbs. The flowers of the form regarded as a typical E. atro-purpureum had deep brown narrow sepals and petals, a soft rosy crimson lip with a darker centre, and two small lateral lobes enclosing the column.

TWO ORCHID CURIOSITIES—ORNITHOCEPHALUS.

With the Epidendrum described above Mr. Tautz showed a plant of Ornithocephalus grandiflorum, a member of the Vanda tribe of Orchids, and as Dr. Masters states, it is "specially remarkable for the long slender rostellum to which the stalk of the pollen masses is attached by means of its terminal glandular disk. This long rostellum on a side view is very like a bird's bill, hence the name of the genus." It will be thus seen that the plant is interesting structurally, and in fact this is its only recommendation, for the flowers are small, in racemes 6 or 8 inches long, the sepals and petals white, green at the base, with a small green lip, and narrow leaves arranged in a distichous manner. The floral structure is, however, so peculiar and unusual, that it is suggestive of some strange method of fertilisation such as Darwin might have dealt with fully. He does, indeed, mention an Ornithocephalus in which "the pedicel of the pollinia when freed from the column suddenly bends into a curved form, and soon afterwards, owing to the hygrometric contraction, curls up oddly, and when placed in water it resumes its previous form." An illustration is also given in the "Fertilisation of Orchids," but no explanation is furnished of the exact bearing the structure has upon the fertilisation.

PHYSOSIPHON LODDIGESI.

The other curiosity from the same garden was the Physosiphon named above, a strange little Orchid related to Stelis and resembling Pleurothallis in habit. It has a long slender spike with very small flowers, the sepals united below into a greenish tube, and the expanded portion being oval and pale brown, quite concealing the petals, lip, and column within the tube, which from its supposed resemblance to a "bladder" gives the generic name to the plant.—C.

THE STRAWBERRY.

In Chicago a few days ago the first outdoor Strawberries of the season were being disposed of in large quantities as low as 5d. per quart, while at the same time in the London markets worth from 1s. 3d. to 1s. 6d. per pound. As the season has again opened for the same, a brief reference to this fruit may be of interest, especially to those who have not yet experienced the pleasures that attend its seasonable use as food.

In 1745 a well-known physician certified that Strawberries create an appetite, contain essential salt, and a small quantity of fine oil; they agree well in hot weather, besides strengthening the heart and keeping the liquids of the body in a just fluidity. In France, it appears, a pleasant and popular drink was extracted from Strawberries for summer use; this was obtained by pressing the fruit through a fine sieve, and adding a sufficient quantity of water and sugar; when complete it was known by the name of Strawberry wine. This wine was made from both wild and cultivated fruit, but of course the superiority of the latter over the former, though so marked, only arises from the fact that the garden fruit receives the full benefit of the sun, whilst the wild plants growing in the wood are shaded by the thick foliage of the trees; hence their pale appearance, diminutive size, and watery flavour arise solely from the lack of heat.

One of the latest and most important facts which has been brought to light, supported by chemical science, is this, that the therapeutic properties of fruit consist in the abundance of health-imparting acids and alkaloids they contain, which, when partaken of freely as food, act in such a direct manner as to cleanse the whole system from impurities; and in fever, ague, biliousness, liver, blood, and kindred complaints, enable one to be independent of nauseous drugs, vegetable extracts, or medicinal herbs of any kind. I do not expect, although we know, as Seneca puts it, "the beaten track is the most dangerous," that man will suddenly alter his diet from meat to fruit, and, if he did, neither should I consider it expedient, for progress is a plant of slow growth; yet, as a fact, chemical science truly says, "Man may live entirely upon fruits, and in better health than the majority of mankind now enjoy." In conjunction with pure wholemeal bread, fresh fruit at any time and at either meal forms a dish fit for a king. To those who do not unfortunately enjoy the best of health, to those who are continually out of sorts, and who are not only low-spirited but scared with "presentiments" of an imaginary and evil kind, I say the remedy is in your own hands, since a diet through the summer season based upon a liberal use of fruit at every meal will assuredly effect a cure. In the delicious Strawberry we have a case in point. Partaken of regularly and at meal time only, for they are rich in mucilage, pectine, sugar, citric, malic acid, and pure water, they not only purify but strengthen, and enable one to relish their food as they have never done before. It should be remembered that the juices of all fruits thin the blood, impart elasticity to the bones, and stave off, if they do not effectually prevent, the accumulation of earthy matter in the system.

In this country they are raised upon a very extensive scale, both under glass by the aid of heat, under frames, and in the open air. The first consignments that reach the English markets, however, come from France; but at their best, these Strawberries are very insipid and inferior, and in no way to be compared to those home-grown. After these consignments, we have our own from the Southampton districts, where they are raised by the ton, then come the supplies from Sandwich, Swanley, and numerous parts of Kent. The Middlesex growers, though a little later, are in the habit of producing some of the finest samples of outdoor fruit grown; this is mostly put up in shallow, flat punnets, holding, as a rule, a full pound each, and on account of their size, colour, and quality, generally meet a ready sale at very profitable rates. For flavour, I suppose, no variety can be said to equal the "British Queen;" and for solidity, size, colour, and popularity "Sir Joseph Paxton" stands without a rival. I might add that during the first week of the season choice fruit from the hothouse early in March has made as much as 1s. 6d. and 1s. 9d. per ounce first hand, or at the rate of 24s. and 28s. per pound. In the height of the season, for some weeks, so plenteous is the supply of this healthful fruit, that if anyone is wise, and will adopt the "Strawberry cure," he may do so to his heart's content, for when sound fresh fruit may be obtained at the rate of 3d. and 4d. per pound, there is no reason why the masses should not, at any rate, consume from two to three pounds daily, for whatever view we take of the suggestion, we shall find that it will, in conjunction with pure bread, be found to be cheaper, more nutritious, and certainly far more wholesome, especially during hot weather, than either beef or beer.—Sampson Morgan, *Covent Garden.*—(*Echo*).

Amateur.—With this letter I send you a few forced Strawberries from our last forced plants for your opinion. I had the variety some years ago under the name of Amateur. We find it good for forcing as a mid-season variety. We have had larger fruits than those sent from pots,

but they are about the average size. As an outdoor Strawberry we find it wonderfully prolific, coming in about the same time as Dr. Hogg. Having heard so little of this good Strawberry must be my apology for bringing it under your notice.—G. R. ALLIS.

[Large and of good quality. This variety was raised by Mr. Bradley of Southwell, the raiser of Dr. Hogg and other good Strawberries.]

EARLY FRUITING STRAWBERRIES—LAXTON'S NOBLE.—I see in your "Notes and Gleanings," page 510, the earliest to ripen in the open air at Chiswick was Laxton's King of the Earlies, fit for use on the 18th inst. I have recommended all Laxton's specialties in Strawberries among surrounding gardeners, and, as in my own case, they find Noble not only the finest in quality but the earliest. I had fine fruits on the 10th inst. in the open air here, and without any coddling or forcing. Mr. Crehan, head gardener at Minella, while speaking warmly of Noble, gives the preference, as at Chiswick, to King of the Earlies as a first crop. I should like to ask correspondents what they have found the best dressing under the berries, everything considered. At Minella a preference is given above all else to dried or spent Hops; with rain or sunshine nothing seems to have so many advantages, and slugs and snails seem to avoid the covering.—W. J. MURPHY, *Clonmel*.

[Dishes of both these varieties were gathered on the same day at Chiswick, Noble being much the larger, but King of the Earlies superior in quality.]

TULIP DISEASE.

TULIPS this year appear in some places to be attacked by a disease identical with one form of disease in Lilies, for it must not be assumed that certain plants are only killed by one special disease. The accompanying illustration, fig. 75, shows on the left a Tulip leaf sent with other leaves and bulbs for examination by Dr. Hogg. The illustration does not show part of a leaf only, but an entire leaf. The upper portion tinted with a dark shade is putrescent with decay. It will be noticed that the lines of putrescence run downwards towards the bulb. Within the thoroughly decayed part of the leaf nothing can be detected, but in the less decayed part towards the base of the leaf small nematodes or eelworms with their eggs are abundant, such as are illustrated enlarged 160 diameters in the middle of the block. These minute threadworms are identical, or almost so, with similar worms found in Cucumber and Carnation plants. The nematodes can be easily traced into the bulbs. An exactly similar state of things exists in one form of disease in Lilies. Whether the fungus named Ovularia elliptica by Mr. Berkeley is able to attack Tulips is more than I can say; all I can say is I could find nothing like an Ovularia on the material sent to me. The putrid part of the leaf was covered with the fungus known as Polyactis vulgaris, a common fungus on decayed vegetable matter. It does not cause disease, but grows on dying tissues. An illustration of the Polyactis from the Tulip is illustrated on the right hand of fig. 75. Its spores are not half the size of the reported spores of the Ovularia. Polyactis vulgaris grows on diseased Lilies exactly in the same style as in the growth on Tulips. My idea is the abundant nematodes which

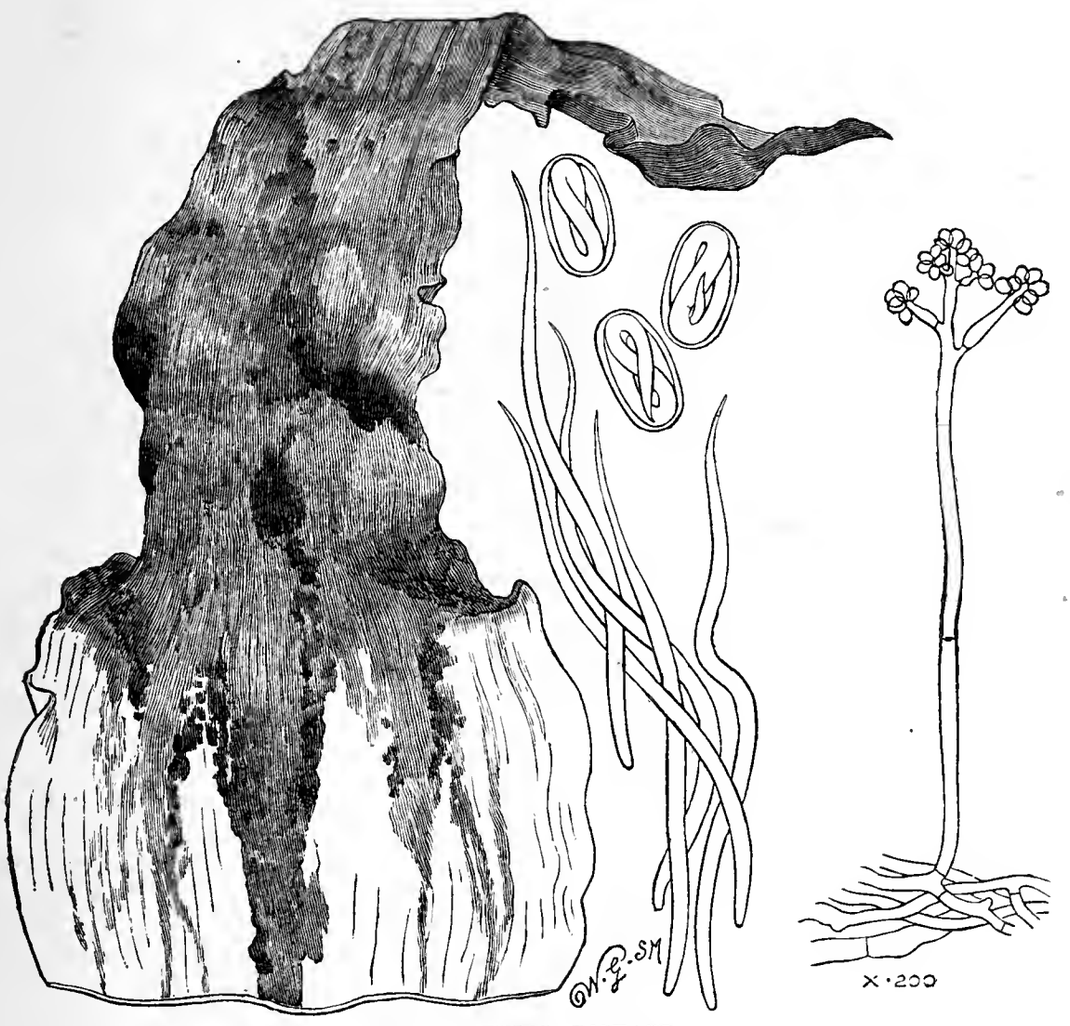


Fig. 75.—TULIP DISEASE.

live and breed within the tissues of the leaf are the cause of this form of disease in Tulips; that they agree with similar nematodes found in Lilies, Onions, Carnations, Cucumbers, corn, &c.; and that the Polyactis plays a mere secondary part, just as it does in Cucumbers, Lilies, and other plants. Three eggs of the eelworms are shown in the illustration with the yet unborn worms within the eggs. These infant worms move restlessly about within the eggs, and rock them from side to side. At length, when the contained nematodes are ready for birth, the thin shells split open and the eelworms emerge. Dr. Hogg reports that he has large beds of Tulips completely destroyed, and that the disease is spreading so rapidly that there will soon be no foliage left to nourish the new bulbs which are now being formed. The eelworms appear to be derived from the ground; they would probably get into the old bulb from the ground and work their way from the bulb to the tips of the leaves. When the leaves fall into putridity the eelworms reach the ground once more. The "gumming" of harvested bulbs in the winter and spring is caused by nematodes within the bulbs; the eelworms bite minute pieces from

the interior substance of the bulbs, and this starts the gumming. Eel-worms are easily killed in the ground by any slightly corrosive solution. The worms are often conveyed to greenhouses in infected water; sometimes, too, they fall in rain.—WORTHINGTON G. SMITH, *Dunstable*.

ROYAL HORTICULTURAL SOCIETY.

JUNE 26TH.

PÆONIES, Irises, hardy flowers, Pelargoniums, Tuberous Begonias, and Orchids formed the principal groups in the Drill Hall on Tuesday last, the greater portion of the available space being filled, but the meeting was less interesting than the preceding one.

FRUIT COMMITTEE.—Present, Dr. Robert Hogg in the chair, and Messrs. John Lee, Philip Crowley, R. D. Blackmore, Joseph Cheal, G. W. Cummins, Sidney Ford, T. Francis Rivers, William Warren, W. Marshall, W. Denning, Charles Ross, Harry J. Veitch, T. J. Saltmarsh, G. Norman, J. Wright, and J. Willard.

Early Strawberries, a new Grape, and new Melons were placed on the table for examination. The first Melon cut was from Mr. Benwell, Cobham, a small fruit decidedly overripe, and on that account was passed. Mr. Gleeson, Clumber, sent a handsome and well grown fruit of his seedling that was exhibited at the last meeting, and described in our report on page 492. Its superior appearance and sweetness led the Committee to record it as a good one for market purposes, but not equal to Hero of Lockinge in flavour, and that record was unanimously confirmed on the present occasion. Mr. Alfred James, gardener to Rev. G. Coventry, Woolstone Rectory, Cheltenham, sent fruits of a medium sized handsomely netted Melon, the result of a cross between Hero of Lockinge and Blenheim Orange. The flesh is scarlet, but the quality, though good, was not considered equal to existing varieties; the fruits, however, did not appear to be in the best condition, and were decaying round the stalk. Mr. William Hussey, Hains Hill, Twyford, sent a wire Melon rest—a wire skeleton hat-shaped contrivance for suspension and holding the fruit; a larger size would be required for fruit like Mr. Gleeson's. It was passed by the Committee. Mr. Ross, Welford, sent his new Grape Mrs. Eyre. It is a seedling from the Black Monukka. The berries are large, oval-shaped, borne on thin footstalks, greenish-white, but had a suspicion of sourness, as if not fully ripe. As a Vine is fruiting at Chiswick the Committee deferred their decision till an inspection of it when the crop is ripe.

Mr. George Paul was accorded a vote of thanks for bunches of fruit of Laxton's Noble Strawberry. A dish of splendid fruit of it was also sent from Chiswick. The fruits are indeed noble in appearance, very early, and though not rich are of good quality, and the certificate awarded last year was considered to be well merited. This variety is sure to be extensively grown. King of the Earlies (Laxton) was also exhibited and highly approved. The plants bear medium-sized, well-coloured, and richly flavoured fruits abundantly. It was also regarded as having been properly certificated, and plants will find their way into many gardens. Lieutenant and Admiral were also placed on the table, but would not bear examination after the two first referred to; but three fruits of Crown Prince, large, symmetrical, and handsome, indicated this to be a variety of promise, and will be looked for again. It was introduced to Chiswick by Mr. J. Smith of Mentmore.

FLORAL COMMITTEE.—Present, G. F. Wilson, Esq., in the chair, and Messrs. J. Laing, W. Goldring, H. Herbst, W. Bates, G. Paul, W. Holmes, R. Dean, T. Baines, C. Noble, H. M. Pollett, J. O. Brien, G. Duffield, E. Hill, B. Wynne, A. J. Lendy, Rev. M. Wilks, and Dr. M. T. Masters.

Sir Trevor Lawrence, Bart., M.P., Burford Lodge, Dorking (gardener, Mr. Bickerstaffe), had a small group of Orchids, comprising a wonderfully fine plant of Dendrobium Bensoniæ, with seven long growths densely crowded with flowers, the white sepals and petals contrasting with the gold-centred lip in which the two black dots stand out boldly. Three plants of Masdevallia Harryana Bull's Blood also came from Burford Lodge, each having several large intensely rich flowers, and Cattleya Mossiæ Reineckiana had five handsome flowers, the sepals and petals white, with a crimson-veined lip. F. G. Tautz, Esq., Studley House, Goldhawk Road, Hammersmith (gardener, Mr. J. C. Cowley), showed several interesting Orchids, amongst which, in addition to the Epidendrum certificated, were the following:—An uncommonly good variety of Cattleya Acklandiæ, with large finely spotted flowers; Saccolabium Rheedi, having small white flowers spotted with mauve in a dense spike; Acanthophippium striatum, the creamy tinted flowers striped with crimson; and two curiosities—namely, Ornithocephalus grandiflorum and Physosiphon Loddigesi, which, with the Epidendrum, are described in the Orchid column. G. T. White, Esq., Drayton Villa, Winchmore Hill, sent flowers of two Brassias, and Messrs. H. Low and Co., Clapton, exhibited a pretty group of Orchids and Ferns, comprising fine varieties of Cattleya Mendeli and gigas; Cypripedium concolor, pale; Regnieri, yellow, with small dots; the new C. bellatulum in several varieties; C. Lawrenceianum, Lælia purpurata, Vandas teres and Roxburghi, and Dendrobium suavissimum.

The Rev. W. Wilks, Shirley Vicarage, Croydon, sent a collection of "Shirley Poppies," representing numerous beautiful varieties, and a remarkable strain of seed described as having been obtained by selection from the Field Poppy, Papaver Rhœas. We have previously referred to the range of soft and rich colours in these Poppies, and an illustration was given on p. 367, Oct. 21, 1886, of the principal variations in the markings. In some the colouring is confined to the margin with a light centre, in others there is a pale or white edge to brighter body colours, and all are handsome. From pure white to blush, pink, and scarlet the intermediate shades are innumerable (vote of thanks). G. F. Wilson, Esq., F.R.S., Weybridge, exhibited several interesting plants and flowers, comprising an Anemone allied to A. polyanthos with white flowers and large leaves divided in a somewhat trifoliate manner; Campanula G. F. Wilson, raised by Mr. Isaac Anderson-Henry, a dwarf variety, having deep blue shallow cup-shaped flowers; the magnificent Cereus Aliee Wilson, one of the hybrids raised by the late Mr. Hovey, and remarkable for the size and rich crimson colouring of the flowers; and Milla laxa with mauve flowers in tall loose heads (vote of thanks). Mr. C. Ross, Pendell Court Gardens, Bletchingley, brought flowers of Aristolochia trilobata, large, veined with dull reddish purple on a pale ground (vote of thanks).

Messrs. J. Veitch & Sons, Chelsea, exhibited some of their new greenhouse Rhododendrons, one of which, Hippolyta, was certificated; the others were Portia, pale yellow, from Taylori crossed with Teysmanni; and Juliet, large buff yellow flowers of good shape, from Taylori crossed with Teysmanni. Flowers were also sent of the typical R. Teysmanni, having yellow flowers and reflexed segments; the fine yellow Queen of the Yellows, the red multicolor var. Curtisi, and the well-known Taylori. From the same firm came a group of hardy shrubs, which in addition to those certificated included some distinct Japanese Maples; Philesia buxiflora, with small Lapageria-like flowers; Elæagnus pungens variegata, having neat foliage; Escallonia macrantha sanguinea, the flowers bright red instead of crimson; Raphiolepis ovata, Robinia hispida, and the white-flowered Escallonia exoniensis.

Messrs. Paul & Son, Cheshunt, had a choice group of alpine and other hardy plants, a cultural commendation being awarded for a good specimen of Phyteuma comosum, grown in a pot. A large collection of handsome Pæonies also came from the same nursery. Mr. C. Turner, Slough, sent a group of show, fancy, and decorative Pelargoniums, and besides the two certificated there were many handsome varieties. Messrs. J. Laing & Sons, Forest Hill, contributed an extensive group of single and double Tuberous Begonias in all the brilliant colours characteristic of the Stanstead Park varieties (silver medal). Messrs. Kelway & Son, Langport, filled one side of a table the whole length of the hall with massive double and single Pæonies, Pyrethrums, stately Delphiniums, and Gaillardias, and seven certificates were awarded, besides a silver-gilt medal. Mr. J. Walker, Whitton, had a most beautiful and tastefully arranged collection of Irises and Pæonies, with the white Gladiolus Colvilli albus, all of which are now grown so extensively for market (silver-gilt medal). Mr. T. S. Ware, Tottenham, showed a handsome group of hardy flowers, Lilies, Irises, and Pæonies predominating (silver medal), and Messrs. H. Cannell & Sons, Swanley, sent a group of Tuberous Begonia plants, with a box of select flowers, chiefly double varieties. Messrs. E. Collins & Sons, Willesden Junction, showed two large plants of Carnation Gloire de Nancy with massive full white flowers, and from Chiswick came plants of Pelargoniums zonale and inquinans, interesting as two of the earlier forms from which the modern Zonal Pelargoniums have been derived.

CERTIFICATED PLANTS.

Rhododendron Hippolyta (J. Veitch & Sons).—The several interesting hybrids obtained from crosses in which R. Teysmanni and R. multicolor var. Curtisi have been employed as parents have been previously noted, and the above is one from seed borne by the last named crossed with Queen of Yellows, a fine yellow variety, also a seedling secured before at Chelsea. The flowers are of moderate size, neat, and partaking of the Curtisi characters; they are borne in a compact head, and the plant appears to be of good habit.

Cæsalpinia japonica (J. Veitch & Sons).—Many Cæsalpinias are known, but they are mostly trees, natives of tropical countries, requiring to be cultivated in stoves, or at least in warm conservatories in this country; but C. japonica is a native of Japan, and would, no doubt, be found as hardy in many districts of England as it is at the Coombe Wood nursery. The leaves are pinnate, the pinnæ small, narrow, and bright green, the bright yellow flowers being produced in erect racemes 8 or 9 inches long.

Daphniphyllum glaucescens (J. Veitch & Sons).—This also is a Japanese plant, an evergreen shrub found in the centre and northern parts of Japan, where it grows to the height of 8 or 9 feet, and compact in habit. At Coombe Wood it succeeds well, and at first glance it might be taken for a Rhododendron with exceptionally beautiful foliage. The leaves are elliptical, about 6 inches long and 2½ inches in the centre, of a soft pale green on the upper surface, with a glaucescent under surface, the petioles and midribs being of a deep red colour, and somewhat of this tint is seen in the bark. As an ornamental shrub, for its foliage alone, this is a distinct acquisition, and novelties amongst shrubs are by no means numerous.

Eulalia japonica gracillima (J. Veitch & Sons).—A slender and exceedingly graceful plant with narrow arching green leaves 3 or 4 feet high. For grouping this plant is most valuable, and arranged as it was with green and red-leaved Japanese Maples, the Daphniphyllum, and other shrubs, it had a fine appearance.

Rose Striped Briar (Rev. H. H. D'Ombrain).—This was certificated subject to its examination at Kew, apparently with the object of determining its correct name or giving it a fresh one—a very unusual course. It is a very pretty variety, judging by the one semi-double white and bright rosy crimson flower exhibited.

Calochortus venustus var. citrinus (T. S. Ware).—A distinct variety with bright clear yellow flowers, with a maroon blotch in the centre of each petal, and a few spots at the base.

Pelargonium Ambassadress (C. Turner).—A charming variety of the fancy section, the flowers neat and rounded in shape, of an extremely soft pink shade, with a white centre.

Pelargonium Spotted Beauty (C. Turner).—One of the spotted decorative section with large well-formed flowers, the ground colour being a soft blush, the three lower petals having a reddish spot in the centre of each, the two upper having a rich maroon centre and a light edge.

Double Pæonies (Kelway & Son).—*Cyclops*, very dark crimson, handsome; *Miss Salway*, white, with sulphur central petals; *Lady Carrington*, broad petals of a delicate flesh tint; *Maria Kelway*, pink guard petals, pink and white central petals: and *Agnes Mary Kelway*, soft blush with narrow sulphur tinted central petals.

Delphiniums (Kelway & Son).—*Bassanio*, single brilliant blue, white centre, tall compact spike; *Figaro*, double deep blue, bronzy purple centre, bold and distinct.

Epidendrum atro-purpureum var. Randi (Sir T. Lawrence, Bart., M.P.; and F. G. Tautz, Esq.).—This Orchid is described fully on page 534, in the Orchid column.

Council Meeting.—At the Council meeting held in the offices, 111, Victoria Street, on Tuesday afternoon, a report was read from the Fellows' Committee in regard to the arrangements for 1889, and it was decided to give publicity to the following notice:—"That the Council having now in hand the composition of the Fruit and Floral Committees for 1889 would be glad to receive suggestions from the general body of Fellows as to any Fellows of the Society whom they may consider to be suitable persons to serve on either Committee." Letters of thanks were read from the Royal Society, the Linnean Society, and the Society of Antiquaries for the contribution of flowers and foliage plants sent on the occasion of their respective annual soirées. A letter was read from the solicitors to the Society promising that the new by-laws, duly revised, should be put before the Council within a fortnight.

At the general meeting, Sir Trevor Lawrence, Bart., M.P., in the chair, thirty-two candidates were duly elected Fellows of the Society.

RAMIE OR RHEEA.

The *Kew Bulletin* for June gives the following particulars concerning Boehmeria nivea var. tenacissima, together with several letters containing information on the manufacture.

The plant known under the several names of China Grass, Ramie, or Rheea, belongs to the natural order Urticaceæ, and hence it is not a Grass at all, but a species of Nettle, somewhat resembling in appearance and habit of growth the common Nettle of Europe.

The China Grass plant, first known and long cultivated by the Chinese under the name of Tchou Ma, is the Boehmeria nivea of botanists. The specific name, nivea, was given to it on account of the white appearance on the under side of the leaves. A plant called in Assam, Rheea, and in the Malay Islands, Ramie, was believed by Roxburgh to be distinct from the Tchou Ma of the Chinese, and it was named by this botanist Boehmeria (Urtica) tenacissima. In this plant there is an absence of the white-felted appearance on the under side of the leaves, so characteristic of the China Grass plant, but in all other respects the two plants are identical in their botanical characters.

For purposes of classification, the Tchou Ma, or China Grass plant, Boehmeria nivea, may be accepted as the typical species, and the Rheea or Ramie retained as a geographical variety of it, under the name of Boehmeria nivea var. tenacissima. This latter is sometimes known as the green-leaved China Grass, a name which may be conveniently retained for it.

The fibre yielded by these plants has been long recognised as pre-eminent amongst vegetable fibres for strength, fineness, and lustre. Hence numerous attempts have been made to cultivate them, and to prepare the fibre in large quantities for commercial purposes. The plants are exceedingly easy of cultivation, and thrive in all soils, but preference should be given to those of a light loamy character. It is essential that the climate be moist and stimulating, in order to produce abundant and frequent crops of stems. The plants may be raised from seed, but the more ready method is by root or stem cuttings. The roots being perennial, the stools become stronger and more vigorous every year, and from these fresh sets are easily obtained for extending the cultivation.

Numerous attempts have been made during the last ten years to extract the valuable fibre which exists in this plant. The experimental processes hitherto employed may be briefly classed as either mechanical or chemical. In the first, it has been sought to extract the fibre from the green stems, by means of rapidly revolving beaters attached to a drum driven by steam power. In some cases water is used to wash the fibre while under the beaters. The chief difficulty experienced in this method is the small quantity of fibre cleaned per day. This has enhanced the cost to such an extent as to render the process practically unremunerative. In the chemical processes, the Ramie stems are treated green or dry. The object sought is to treat the stems either under great pressure with steam or with chemicals, so as to dissolve the gum in which the individual fibres are immersed. After being thus treated, the fibres are easily detached from the stems by hand or by machinery, and are sent to market in the form of ribbons. The question of cost is here also very important, and it is felt, under present circumstances, that China Grass can only be satisfactorily grown and prepared where there is an abundance of cheap labour.

It is a fact universally known that the fibre of the China Grass is one of the finest and strongest known. If a process could be devised that would extract and clean the fibre at a cheap rate, the results would prove of the greatest possible interest to all our tropical colonies. The China Grass plant can be grown as easily as the Sugarcane, but in spite of many years of continuous effort, the problem how to prepare the fibre on a large scale, and place it in the market at remunerative rates, is apparently still unsolved.



NOTES ON SUMMER TREATMENT.

The months of June, July, and August is a busy time amongst growers of Chrysanthemums, but especially so where a large collection is cultivated with a view to exhibition, numbering from 400 to 600 plants, and at this time many other duties press heavily on gardeners. I am afraid during the time named many collections of plants, small as well as large, are spoilt through neglect at this season of the year. It is a mistake for any cultivator to attempt to grow too many plants. Far better would it be to grow fewer, that they might have all the necessary attention given them when required. One of the greatest mistakes made by beginners in Chrysanthemum culture is neglecting to place their plants into the largest pots soon enough. Often they are left until time can be found after the bedding-out has been completed, or sometimes it is the want of a sufficient number of pots that is the cause of delay. However that may be, failure may often be traced to this cause—delay in potting. All plants should be at once potted with the least possible delay. The pots must not be too large. Those 9 inches in diameter are best suited for the majority of single plants. Some weak-growing varieties, such, for instance, as Princess Beatriee among the incurved, and Criterion as a Japanese variety, may have pots 1 inch less in size than for the bulk of the sorts. It is a mistake to place weak-growing varieties in pots which they never can properly fill with roots, and they can never be safely supplied with stimulating foods with the same chance of success as when the pots occupied are full of healthy roots. The constant application of water renders the soil sour and not at all adapted to the requirements of weakly rooted varieties. Where larger sizes of pots are in store than those named, it is much better to place two plants in one pot; a great saving of space and time is thus gained, and the results are more satisfactory.

The soil used should be tolerably rich, as the Chrysanthemum, having such a short season of growth, requires the soil of a good character wherein its work may be quickly effected. Where the soil is heavy means should be taken to lighten it by the addition of partly decayed leaves, wood ashes, charcoal, and sand. The plants should be potted firmly, again making allowance for the nature of the soil; that of a heavy class will not require so much firming as the lighter sort. The last-named cannot easily be rammed too firmly into the pots at the last shift. The growth then is made in a much more solid manner. It may not be so quick at first, but the quality of the wood is more easily gained by firm potting than by potting loosely, which produces gross growth, all other conditions favourable; but the quality of the flowers produced, notably the incurved section, is never so high as when firm potting is practised. The blooms may be as large, possibly larger, in diameter, but they lack those most essential points which stand almost first in an incurved bloom—depth and solidity—of course taking into consideration that the bloom is of reasonable size.

The next detail in successful Chrysanthemum culture, where large blooms are required, is the manipulation of the shoots at critical times. I have seen many collections of plants spoilt at an early stage of their growth through neglect or ignorance in dealing with the branches in a manner best calculated to induce satisfactory results. Where plants are grown by what is generally termed the natural way of training them—that is, allowing them to grow away from the cutting without topping the main shoot or leader, the first natural break into additional branches generally takes place from the middle of May to the same time in June, varying according somewhat to the time the cuttings were struck and the manner in which they have been cultivated. The "first break," as it is called, is caused by the formation of a flower bud in the point of the leader or stem. During the time this is forming growth at that point is checked. Nature provides for this check by the growth of an additional shoot from each node. Now is the time when the object for which the plants are being cultivated should be declared. If the finest flowers are the object, the growths named must be restricted to three of the strongest, which are generally those nearest the point where the flower had formed. Remove all other shoots but those chosen to produce the number of flowers required as soon as they can be handled with safety, pinching out at the same time the flower bud formed.

Secure to supports the new growths as need be, remembering that loss of any of these means a loss of flowers. Daily attention is required at this time to see that none is broken through being tied too tightly or other causes. The best means of securing the growths is that of erecting a temporary trellis of wires, stakes, or other contrivance most convenient to the cultivator, and sufficiently high to allow for the whole summer's growth. Such trellis should be erected in the place the plants are to

occupy during their stay outside, say from the early part of June to the first or second week in October at the latest in almost any district. The method of fastening the shoots to the trellis is this:—In each pot place a stake sufficiently long to allow the whole season's growth to be fastened to it. Fix the stake midway between the plant and the side of the pot, as in this manner the risk of damage to the roots by the insertion is not so great as by placing the stake close to the stem of the plant. Secure this stake to the trellis cross supports, which keeps all steady. To this stake the centre growth is tied, the shoot on each side of the central one should be tied to upright small stakes fastened to the cross rails temporary. When housing the plants the side branches are tied loosely to the centre stake. By spreading out the branches in this manner sturdy growth is made during the summer, which becomes more solidified as it proceeds, owing to the thorough light and air each separate branch obtains over the plan of tying the three stems to one centre stake. Disbudding the shoots or lateral branches is more easily accomplished in this manner, and mildew is not so liable to attack the leaves as it is when the leaves are huddled together.

The position the plants occupy during the summer is important. Some growers are more favoured in this than others. What is required is an open space where the plants will receive the whole day's sun and still be protected from east, north, and south-westerly winds. The two former cause a serious check to the tender growth in the early part of the year when the plants are newly placed into their largest pots, as about that time winds are prevalent. Although the plants may not be so seriously injured as to be broken, yet the leaves are often bruised, which must give a check to the plants. Cold winds also prevent that quick start into new growth after potting so desirable to establish the plants in their new quarters. We generally arrange one row on each side of a kitchen garden path, as there they obtain the whole sun's influence. Where the plants must stand in a block good space must be allowed between the rows.

Watering the plants at this season of the year is an important point in the successful cultivation of Chrysanthemums. After potting too much water can easily be given to the roots, which causes the soil to become sour and stagnant before the roots can possibly have taken possession of it. If the soil was moist when potting was performed the plants will not require any to the roots for four or five days, except the sun be very powerful or a strong drying wind prevails. Much better is it to syringe the leaves of the plants twice daily until new roots are running into the fresh compost. Afterwards much care should be exercised in allowing sufficient water, and no more. Retentive soils are much worse to deal with than are light soils. The former needs more exactitude in supplying the roots with water only when needed. Rapping the sides of the pots with the knuckles is the surest means of judging of the requirements. The size of the pots, vigour of each variety, and position the plants occupy all influence the supply. During hot days in summer three times is not too often to apply water to the roots in some instances, while others will need no more than two applications. The quality of the water is important. Much may be done to minimise the difficulties contained in some kinds of water to the proper development of plant life. Where it comes direct from companies' waterpipes it should be allowed to stand in the sun some time before being used. In any other way a chill is given to the roots by applying it direct from the pipes, and is a great cause of the spread of mildew. Water which contains a large per centage of carbonate of lime in solution is bad for the plants, and should be softened before using by some process, such as by dissolving common washing soda at the rate of a quarter of a pound to 36 gallons of water, or by the use of anticalcaire, more commonly called milk of lime. To 250 gallons of water add 1 lb. of the latter, allowing it to stand for twenty-four hours, when the chalk will be precipitated to the bottom of the tank, and the water will be rendered soft. When a supply of rain water is obtainable much less trouble is necessary, and better results obtainable generally. During bright weather the plants should be vigorously syringed in the evening of such a day. It cleanses the leaves from dust and refreshes the plants after a hot day.

Insects are particularly troublesome this season, rendering a sharper outlook necessary, and the applying of prompt measures to secure quick eradication, which is easily done if time is taken by the forelock, procrastination being not tolerated. Green and black fly are easily got rid of by dusting the parts affected with tobacco powder; mildew by the use of flowers of sulphur sprinkled on the affected parts twice—if once is not enough. During the month of June the Celery fly becomes most persistent in its endeavours to destroy the foliage. This is a small grub which is secreted between the two skins of the leaves, burrowing away until the leaves are so disfigured in appearance that their complete removal is requisite. The leaves nearest the soil are those generally first attacked, and if not at once checked, which can only be done by hand-picking, the whole stem for 2 feet upwards is quickly destroyed in appearance by the loss of foliage. Earwigs, too, have commenced their depredations sooner this year than common; they secrete themselves amongst the young leaves at the point of the main stems, burying themselves out of sight by eating away the heart of each point. The moment a leaf at the point shows signs of curling it is a sure indication of an intruder which must be caught and killed.—E. Molyneux.

ROYAL METEOROLOGICAL SOCIETY.

The concluding meeting of this Society for the present session was held on Wednesday evening, the 20th instant, at the Institution of Civil Engineers, 25, Great George Street, Westminster. Dr. W. Marcet, F.R.S., President, in the chair.

Mr. F. de B. Collenette, L.R.C.P., M.R.C.S.; Mr. J. Ewart, M.R.C.S.; Mr. F. A. Velsehow, and Mr. J. T. Wills, F.R.G.S., were elected Fellows of the Society.

The following papers were read:—

(1), "First Report of the Thunderstorm Committee." This report deals with the photographs of lightning flashes, some sixty in number, which had been received by the Society. From the evidence now obtained it appears that lightning assumes various typical forms under conditions which are at present unknown. The Committee consider that the lightning flashes may be arranged under the following types:—1, stream; 2, sinuous; 3, ramified; 4, meandering; 5, beaded or chapletted; and 6, ribbon lightning. In one of the photographs there is a dark flash of the same character as the bright flashes, but the Committee defer offering any explanation of the same until they get further examples of dark flashes. As the thunderstorm season is now coming on the Committee propose to publish their report at once, along with some reproductions of the photographs by the autotype process, in order that observers may be prepared to notice the various forms of lightning.

(2), "The Cold Period from September, 1887, to May, 1888," by Mr. C. Harding, F.R.Met.Soc. The mean temperature for each of the nine months from September, 1887, to May, 1888, was below the average, whilst in the case of October there has been no corresponding month as cold during the last half century, and only three colder Aprils. In London the mean temperature for the period was only 42·4°, and there has been no similarly low mean for the corresponding period since 1854-5, which will be remembered as the time of the Crimean war, and only three equally cold periods during the last fifty years. The temperature of the soil at Greenwich at 3 feet below the surface was below the average in each month from October to April. In October and April the temperature at this depth was the coldest on record, observations being available for the last forty-two years, and in November it was the coldest for thirty-seven years.

(3), "Observations on Cloud Movements near the Equator, and on the General Character of the Weather in the 'Doldrums,'" by Hon. R. Abercromby, F.R.Met.Soc. The author gives the results of observations made during four voyages across the equator and the "Doldrums," with special reference to the motion of clouds at various levels. Two voyages were across the Indian Ocean during the season of the north-west monsoon, and two across the Atlantic in the months of July and December. The nature of the general circulation of the atmosphere near the "Doldrums" is discussed as regards the theory that the trades, after meeting, rise and fall back on themselves, or, according to the suggestion of Maury, that the trades interlace and cross the equator, or as following the analogy of Dr. Vettin's experiments on smoke. It is shown that the materials at present available are insufficient to form a definite conclusion, but details are given of the general character of the weather and of the squalls in the "Doldrums," with a view of showing what kind of observations are required to solve this important problem. The old idea of a deep trade—with a high opposite current flowing overhead—is certainly erroneous, for there is always a regular vertical succession of the upper currents as we ascend, according to the hemisphere.

PLANTS OF THE ISLAND OF PORTO-RICO.

The interior of the island is very charming, with its multitude of rivulets, rivers, Coffee plantations, and hills, still covered in some places with the Cedrela odorata, Daeryodes hexandra, the Mimusops, the Hedwigia balsamifera, and many other valuable trees of the primitive flora, with a variety of Ferns, Orchideæ and graceful Palms raising their crowns high above the dense underwood, which reveals the loveliest and brightest flowers in wild profusion, filling the air with their perfumes.

It is a source of pleasure to behold along the banks of rivulets the graceful Jambosa vulgaris, Bambusa, Piper caudatum, Bixa orellana, several varieties of Citrus and the Heliconia caribea, the plant of the poets, showing its beautiful racemose scarlet flowers, and inviting the traveller to rest. The Hibiscus liliaceus and the Bromelia Ananas grow side by side, protecting plantations of Maize, Rice, Potatoes, and pastures of several species of indigenous Graminæ, which never grow so luxuriously as the exotics, giving room for the intrusion of Poppies, Vervain, and other flowering plants, so that the landscape of the fields is more beautiful than that of the coasts, and resembles somewhat that of Southern Europe. On the hill slopes and ravines are the great plantations of Coffea arabica, protected by other taller forms of vegetation, among them the fruit-bearing tree Mimosa Inga. In the same formation the Theobroma Cacao is also cultivated, but not to the extent that it ought to be. The tree grows there quickly, and the product is of the best quality. Several species of Plantain and Banana, Potatoes, Rice, Corn, Yams, Marants, Ginger, Pignut, Oriental Oily Grain, and other economic plants are cultivated all through this fertile zone, producing food sufficient for the consumption of its inhabitants. This explains in part the increase of the population, which is to-day about 800,000, the great majority white.

The Caladium aquatile and the Arum arboreum, growing wild, the first at the margin of the streams, are also eaten by the poorer people. In the hills bordering the southern coast towards Salinas and Coamo, the Zamia intermedia grows wild with its feculent rhizome. This is

another help for the poorer classes, who extract the starch by the same process as used for the Manihot, eating the pulp the same as Casabe.

Lately, it has been stated that the leaves and buds of this plant when eaten by cattle produce a kind of paralysis of the extremities. I do not know to what extent this is truth, but I know positively that the rhizome is as poisonous as that of the "bitter cassava," and that the acrid principle is got rid of by repeatedly washing the pulp.

The Cocoa-nut Tree (Cocos nucifera) is met with all over the island, but it is more abundant on the marine zone, or litoral, where the fruit is collected and shipped. The oil is extracted, and it is of some economical importance. In moist places semi-aquatic plants will be seen growing, as the Echinodorus cordifolius, Nymphæa crenata, and other pretty ones. Besides the white native Rose, the common Rose, both red and white, has been long introduced, with many more exotic flowering plants now abundantly cultivated in gardens. Besides these almost all the garden plants of colder climates grow or are cultivated wherever there is a plentiful supply of water. Several new species of handsome Ferns are found on the highest ridges, as between Maunabo and Jabucoa on the Sierra of la Pandura, among granitic rock, forming a vegetation peculiar to these regions.—(*Pharmaceutical Journal.*)

ERICA SPECIOSA.

A PARTICULARLY handsome summer-flowering Heath is Erica speciosa when seen at its best, but unfortunately this is too seldom now,



FIG. 76.—ERICA SPECIOSA.

as, with many other beautiful members of the same genus, it has gone out of favour because it requires rather more attention than a Zonal Pelargonium. The plant is of bold distinct habit, the leaves deep green, slightly hairy, and arranged closely on the branches in threes. The flowers (fig. 76) are generally produced three or four together from the little branchlets, the tubular corollas often exceeding an inch in length, rich red in colour except a tinge of bright green at the tips. It requires similar treatment to other hardwooded Heaths, a little extra care in the supply of water being advisable.

GREVILLEA ROBUSTA IN CEYLON.

FAMILIAR as this plant is in British gardens, it is rarely seen in flower, but it appears from the following note in "The Tropical Agriculturist" to be particularly happy in Ceylon :—

"We have said that this tree is 'distinguished by its large masses of comb-shaped, orange coloured flowers,' and these words are necessary to a proper description of the very striking Grevillea flowers, forming such a contrast of vivid colour to the wealth of green, graceful, Fern-like foliage with which the tree is clothed. Grevillea robusta is one of the most ornamental as well as one of the most useful sylvan gifts which Australia has bestowed on Ceylon. Here the tree does not compete with the Blue Gum in rapidity of upward growth, but in thickness of stem in an equal number of years it excels most of the Eucalypti. Many of the latter which have thick stems within a few feet of the ground have a habit of tapering away almost to a point as they get up higher and higher, some of them attaining 100 feet, or even 150 in ten years. In its own native habitat (New South Wales and Queensland), the Grevillea tree (the 'Silky Oak' of the settlers), attains on rich alluvial banks of rivers a height of 100 feet. Specimens fourteen years old in Ceylon are about 60 feet in height, judging by the eye, but careful measurements may correct this estimate. Of course the trees in the loose, accumulated soil on the sides of the Lorne Road, to which we alluded as having become fine trees in seven years, are in very favourable circumstances for rapid growth. But like most other trees they ought to be planted in groves and pretty close together to secure perfectly straight trees. A good many of the trees in the single row along the Lorne Road have indulged in some curious bends and contortions under the influence of winds and loose soil. But we suppose that even crooked timber is useful for 'knees,' wheel tires, and so forth. We may repeat that in Australia the timber of Grevillea robusta is the favourite for staves of tallow casks. It might, therefore, be useful in Ceylon for oilcasks. The genus to which this tree of equally beautiful foliage and inflorescence belongs, is described as 'very large, comprising some beautiful and interesting Australian flowering shrubs and trees. Nearly 200 species have been described, all, with one or two exceptions, indigenous to Australia, and two-thirds of that number belong to Victoria. They are chiefly admired and cultivated for their flowers; some of them are of a dwarf, Heath-like habit; others are trees of considerable size.' Amongst the Eucalypti which have made the best growth at Hakgala, and on poor soil, is E. marginata, the grand jarrah, which gives the finest timber of all the species, vieing with oak in quality and with mahogany in beauty of colour and polish. This noble and useful tree seems to take more kindly to the Ceylon hill regions than most of the Eucalypti. The Red Gum (E. rostrata), with its clean stems and elegant drooping foliage is very beautiful, but it seems difficult to grow, and has an unfortunate habit of dividing into two or more stems. The most ready grower is the Blue Gum (E. globulus), and the more we learn about the timber of this tree, the more favourable is our impression, if only the timber is well seasoned. Darkened with oil the wood resembles fine sapu."

PRACTICE AND SCIENCE.

A RECOGNISED authority on Rose culture writing about feeding Roses, affords the following text :—"Liquid or any other manure is only of use when the plant is in full growth and health; at all other times it is poison." This text is good for a long and profitable discourse, but it need only serve here as an introduction. Are we in our artificial modes of plant culture, propagating, sowing, manuring, &c., sufficiently scientific or not? This is not begging a question, because all practical culture is more or less scientific. Taking the subject of manuring, can we say that the customary methods are the only correct ones, or even the most correct? One can sympathise with the worried gardener in his everyday vocation, for as he looks around his stocked houses and borders the feeling that "he knows enough" is sure to arise. But is there another side to the question? There is an old saying that "one side of a story holds good till the other is told." That saying opens out the side of a contention which may be said to be antagonistic to the experience of generations. Who is so likely to guide us and decide for us in our attempts to vie with Nature as Nature herself? These are Nature's methods and agents of plant culture in a manurial sense: Supplying carbonic acid gas for absorption by the leaves, with oxygen, hydrogen, carbon, and nitrogen for absorption by the roots; providing earths, silicates, and other mineral substances, such as sulphur, iron and alkaline salts, from which the various compound elements in the elaborated plant are derived; the unceasing round of growth, fructification, decay, and decomposition ever going on in the vegetable world, serving to balance the work. Does it ever strike observers how exactly true the provisions in the latter respect are? The air we breathe would shortly become unbreathable were it not for the plants, trees, grasses, and flowers. The supply of the food we eat would soon be at an end if its restoration to earth was not provided for, there to renew its existence, or stimulate that of other and succeeding races. Nature sows seeds by an unfailing and unerring plan. She covers them with the sweetest top-dressings, or deposits them gently in the shaded and moist places most suitable for their reception.

On the other hand, Nature does not teach us to foul the soil, to clog it, to stint or limit the free passage of air and of water. Nowhere, except by accident, are decomposing animal and vegetable matters brought into immediate contact with the roots of plants. Our artificial methods of culture, in so far as they relate to the best mediums for root action and root ramification, are considerably at fault if the foregoing reasoning is accurate. Perhaps in no particular lines are they more so than in those of sweetness and porosity of the soil. We compound potting and rooting materials that serve to generate or develope fungoid growths, parasitical organisms, and stagnation of root action. Will any of the readers of this paper ask themselves if they can recall what has been the result on the first succeeding crop, when they have been led to apply a heavy dressing of freshly slaked lime to a plot of manure-

sick soil? Foliage was rampant, was it not? The liberation of formerly inert elements was too excessive, hence the results.

I maintain that in ordinary pot culture we can avoid all these excesses. Why should we insist on using leaf mould to the extent we do? If we must add elements that are of a manurial nature we should see that they are not such as will foul the soil. The most intelligent and enterprising gardeners of the present day are more than ever convinced of the truth of these assertions. Charcoal and burnt earth for giving sweetness and porosity are consequently more than ever in demand; and where the need of such elements as phosphates exists these elements are supplied in a more natural and a more simple form than they were formerly. That fertilising moss is a suitable medium for plant culture has been proved. There is nothing new or uncommon in the practice of placing balls of moss round the roots of plants. One of the largest collections of plants in London for open-air bedding and decorative purposes is being so treated this season. That anyone should have succeeded in causing moss to take up and retain the more frequently required elements for stimulating the growth of plants is a fact worth recording. That moss—sphagnum or any other variety—has of itself an elasticity, and that it gives lasting porosity and so affords free passage for air and water, is freely admitted by all who have used it. Sphagnum moss is expanded by fermentation, and charged when in that condition with the alkaline salts and nitrogen matters so necessary as plant stimulants. As an auxiliary to loam, or when used with equal proportions of it, it will be found all that is desired.—A. B. W.



KITCHEN GARDEN.

Cauliflowers Going Blind.—This is a complaint well known to all who grow many Cauliflowers. The plants may have a good centre when planted out, and shortly afterwards it may be noticed that they have no centre, but are only composed of a few outer leaves. They are completely blind, and will never become of the slightest use. Many plants of Veitch's Autumn Giant have lately behaved in this way with us, while in another quarter of Eclipse very few indeed have been lost. We have noticed that when we persisted in dusting the plants frequently with lime or soot a blind plant is an exception, and the attention devoted to them in this way is not labour thrown away, but it occurs oftener in the spring and early summer months than now, and autumn plants are rarely effected, but should they be so dusting with soot and lime should begin as soon as it is noticed. Look over all quarters now, pull up the plants that have no centre, and place good plants in the vacancies. Unless this is done the crop will be very patchy and unprofitable.

Savoys.—We often hear of some being planted to form an early supply. This is a mistake. Early Savoys are rarely required and never desirable. We have had many of them, but the bulk of them were not used. They burst before winter, and now we never make an attempt to have early Savoys. They are not palatable until vegetables are becoming scarce, but from the middle of November onwards they are fit for any table, and it is for a supply beginniug at that time that all should grow them. If seed is sown now of Little Wonder, the plants will head at the season named, and in no case should any be planted in their permanent quarters until the middle of July.

Miniature Drumhead Cabbage.—These are equally as hardy as Savoys, and they are certainly more agreeable, as they are of excellent flavour in the winter. Some grow the large Drumhead, but it is very coarse, not fit for a good table, and the miniature variety possesses all its properties except size, which is no recommendation. If these little Cabbages are put out at the same time as the Savoys, their owners will appreciate them before midwinter.

Endive.—We see this in the markets now, but it is not a favourite in summer when the Lettuces are good and plentiful, and it only becomes a general favourite in the autumn. The Moss-curled is the best for autumn, and the Broad-leaved Batavian for winter. Sow a little of the former now, but a pinch of seed will produce as many plants as are needed at once, as Endive soon runs to seed in the summer months. The seed may be sown in a row or broadcast, covered to the depth of half an inch, and plant as soon as the seedlings are 2 inches high, keeping them 1 foot apart each way.

Earthing Early Celery.—The first Celery is now about 1 foot high. It will be in good order by August. Give it a thorough soaking of liquid manure and then earth it up a little. We break down some of the soil on each side of the trench, and then work it round the plants to to the depth of 4 inches. Take a few of the short outer leaves off before earthing, and if well watered now it will not require any more, as the soil that is put over the roots will prevent their drying too much again. Give young late Celery plants abundance of water constantly, but do not plant them in trenches until the middle of July or later.

Large Leeks.—Those who grow these for show generally have them of a fine size by August, but size is nothing unless they are well blanched, and to effect this they must be earthed up. The early ones are ready for this now, and a good quantity of soil should be put to the stems at once. Water freely before earthing, and give them liquid frequently afterwards. They will take any amount of rich feeding.

Peas.—We gathered our first Peas from plants raised and grown in the open on June 15th. Should the weather become dry thorough watering will be needed. Mulching is also beneficial, the material being spread along each side of the rows, and almost anything will do, as the object is to retain the moisture at the roots. The mowings of grass if a little decayed answer capitally. All Peas should be staked before they fall to one side; and although Peas may be grown without the aid of stakes and by allowing them to rest on the ground, the pods are not so fine nor the crop so abundant in this way as when staked. Sow more seed to produce a supply about the middle of September, and in all cases practise the trench system so often advocated in this column.

Kidney Beans.—Runners are sometimes grown without stakes, but it is not so profitable as when stakes are employed. If the stakes cannot be had from 6 feet to 8 feet high, use them 3 feet or 4 feet, so as to give them a little support at first. Very cheap and good stakes may often be had from odds and ends about saw mills. Runner Beans do not suffer so much as Peas from drought, but watering in dry weather benefits them, and if time and water can be spared they may have this attention. As a rule Runner Beans are sown too much together and too early, as the Beans are generally plentiful and good in August and September, but by October they are mostly over; but by sowing in July tender pods may be secured as late as October, or indeed sometimes in November. Dwarf Beans are the first to bear, and the whole of these should now have a quantity of earth drawn to the stems in the form of an earthing up. Immediately after this operation we have seen the plants turn a dark green colour from a previous pale yellow hue.

Planting Brussels Sprouts and Broccoli.—These two useful winter and spring vegetables should be planted out as soon as possible. Broccoli may do a few weeks after this, but late-planted Sprouts never gain a useful size, and they should all be planted by the end of June.

Early Potatoes.—We are now digging very good Ashleafs from the open border, and where space is wanted urgently for other crops Potato digging should begin as soon as they are ready. They are so acceptable at this time that if not quite matured they will be very superior to the old tubers.

FRUIT FORCING.

Vines.—*Early Vines.*—Those from which the fruit has been cut must be well syringed every evening to preserve the old foliage as long as possible in a healthy condition, for when the foliage dies early from red spider or other cause second growth not unfrequently sets in when they ought to be going to rest. Admit air to the fullest possible extent, and maintain a moderate degree of moisture in the border, particularly at the surface, so as to keep the roots there instead of allowing it to become dry, and so causing them to descend in quest of moisture. A moderate extension of the laterals will not do any harm, but irregularities of growth, and particularly gross ones, should be checked by pinching or entirely removed.

Grapes Swelling.—Afford every encouragement; nothing helps so much as a genial condition of the atmosphere, which should be secured by a gentle warmth in the pipes, and sprinkling available surfaces in the morning and afternoon, particularly the latter, the border being mulched with short rather fresh lumpy stable manure, additions being made from time to time so as to insure a supply of ammonia to the atmosphere and organic matter for washing into the soil each time water is required. The mulching should be kept moist. Avoid a close vitiated atmosphere, particularly in close dull weather. A little ventilation almost constantly at the top of the house will make all safe, but it is desirable to close the house in the afternoon, well damping at the same time, allowing the temperature to rise to 90° or 95°, and after the sun passes the west, or at six o'clock, provide a little ventilation at the top of the house. It will allow of a change of air taking place, prevent excessive deposition of moisture through the night, and the foliage will not be so nearly liable to be scorched should the sun act powerfully on it before the ventilation is increased, which it ought as soon as its rays act on the structure sufficiently to raise the temperature. The great cause of scorching is inattention to early morning ventilation. It will be sufficient to ensure a night temperature of 65°, and a day temperature of 70° to 75°, having recourse to artificial means if necessary. Commence increasing the ventilation between 70° and 75°, allowing it to advance to 80° or 85°, between which keep through the day, and close so as to rise as before stated to 90° to 95°. Allow a steady growth of the laterals, it keeps the roots active, but avoid overcrowding, not allowing the laterals on any account to interfere with the free access of light and air to the leaves that are elaborating and storing food in the buds at their base, those being the pruning buds. Afford full supplies of water or liquid manure as required. The outside borders should not be neglected where the rainfall is insufficient, and a mulching of fresh lumpy stable manure will lessen evaporation without depriving the soil of the beneficial action of air, warmth, and the moisture of dew and rain.

Grapes Ripening.—Still continue a fair amount of atmospheric moisture, and give the inside borders, and outside as well if the weather be dry, a good soaking of tepid water or liquid manure, and mulch at once with some rather dry litter but short, 2 or 3 inches thick. This will mostly be sufficient for perfecting the Grapes. Directly they begin

to colour afford plenty of air, a little fire heat being essential to their higher perfection, especially in flavour, insuring a circulation of warm rather dry air, but allow the temperature to fall to 65° at night, otherwise securing by artificial means a temperature of 70° to 75°, and 80° to 85° through the day for Black Hamburghs and similar varieties, and Muscats should have a night temperature of 70° to 75°, 80° to 85° by day up to 90° or 95° from sun heat.

Grapes Stoning.—The weather we have had recently—dull and cold with occasional gleams of sun—is the worst that can be for scorching and scalding. The best means of preventing both is a rather high night temperature, early ventilation and free by day with a little at night. It is not desirable to close early at this critical period—the close of the stoning process; but do so carefully, and as the liability to scalding does not extend over more than a fortnight to three weeks particular attention should be given to ventilation. If the weather be very bright, and there is most to be dreaded on bright weather succeeding a dull and moist period, a slight shade over the roof lights is very beneficial. A double thickness of herring nets will afford all the shade required.

Late Houses.—Grapes to hang through the winter require more thinning than those not intended to keep for any lengthened period. The high and dry borders of modern culture do not receive as a rule anything like the quantity of water they require, especially inside borders. They should be well mulched and very liberally watered. Keep free from all gross laterals, but allow a little extension, always taking care not to allow any encroachment on the principal leaves, which to duly perform their offices must have full exposure to light. The thick-skinned varieties and Muscats like plenty of heat. Employ fire heat to insure a day temperature of 70° to 75°, and 65° at night. Through the day maintain by sun heat a temperature of 80° to 85° or 90°. Black Hamburghs need not be hurried. They will come on quite fast enough without artificial heat for the next two months, and when ripening as they should do, if they are to keep well by early September, fire heat can be given as necessary.

Pot Vines.—Those that have completed their growth should now have less moisture, syringing being discontinued, and the supply of water at the roots moderate, air being freely admitted, and afford the principal foliage all the light practicable.

Figs.—*Early House.*—The first crop will be all gathered and more moisture in the atmosphere will be desirable, therefore resume syringing the trees twice daily and damping available surfaces whenever they become dry. Thinning the fruit for the second crop if plentiful must be free, reserving those which are nearest the base of the shoots. Tie in the growths to the trellis as they advance, stopping or removing such as are not required, regulating those retained so that they may receive the beneficial effects of light and air to mature them perfectly. Do not allow the trees to suffer by want of water; those in borders of limited extent will require water frequently, affording on every occasion liquid manure, or a little fertilising agent may be sprinkled on the border and washed in.

Fruit Ripening.—Where crops are ripening constantly maintain a free circulation of dry warm air, which is essential to Figs ripening perfectly. A moderate air moisture is, however, necessary for the benefit of the foliage, and, though less moisture in the soil is advisable when the fruit is ripening it must not be allowed to become parchingly dry or the trees will suffer. If necessary afford fire heat to maintain a night temperature of 65°, and 70° to 75° by day, and to admit a free circulation of air.

Trees in Pots.—Those required for early forcing must not be neglected in syringing, as the foliage must be kept clean and healthy, exposing the plants to light, and ventilate freely. Attend with regularity to the watering, supplying liquid manure on every occasion.

Cucumbers.—A few seeds may now be sown for late summer and early autumn supply of fruit. They will germinate and the seedlings be fit to plant out in about a month. Attention must be given to plants in full bearing by way of thinning out the exhausted growths and foliage, laying in young bearing wood, stopping one joint beyond the fruit, and earthing up the roots periodically. Copious supplies of water or liquid manure will be required about twice a week or as may be necessary, but avoid applying it too strongly, syringing at closing time, and maintaining a good moisture all day by sprinkling every available surface as necessary, but more frequently in hot weather than when dull. Do not overcrop young plants, and do not allow the fruits to hang too long, as upon attention to this depends in a measure a good and continuous supply.

PLANT HOUSES.

Poinsettias.—The earliest rooted plants should be transferred into 6-inch pots and placed in an intermediate temperature until they have commenced rooting freely amongst the fresh soil. They may need shading lightly for a few days or a week after potting, but be careful not to draw them up soft and weakly by overshading them. When root activity has fairly commenced, gradually prepare them for cold frames by the admission of air and a lower day and night temperature. Every care must be taken not to bring growth to a standstill by removing them to cool positions. At first they should be kept moderately close, and the frame closed early in the afternoon while the sun is still upon it. Poinsettias are often grown too warm, and only draw up tall and weakly in consequence. When once they are well established in their pots air should be liberally admitted to them, and very little, if any, shade employed. Such treatment will result in dwarf plants with solid wood that will not fail to produce at the proper season large brilliant bracts. As successional plants are rooted remove them to cooler quarters, and prepare them for removal to cold frame treatment by the time they are ready for their flowering pots. Cuttings may still be rooted, and useful decorative plants will be produced if this is practised until the middle of July. Use for a compost good fibry loam, one-seventh of decayed manure and sand. Water carefully, but never allow them to suffer by an insufficient supply.

Euphorbia jacquiniæflora.—If the method of preparing the plants for yielding cuttings previously described has been practised, the necessary stock of plants will have been rooted. The earliest are ready for 5-inch pots, and when established in these cut them back, and the result will be plants with three or more shoots instead of one. In some cases plants with one stem are the most serviceable for furnishing; in such cases allow the plants to extend without cutting them back. Merely pinching out the points of the plants to induce them to branch is useless, for they will start away with one shoot only, but if cut back to the firm wood they will branch freely. Later plants may be grown on without pruning. Cuttings can still be rooted for flowering in 3-inch pots. The old stool plants can be cut back and started into growth in heat; when they have broken repot them. Do not overpot these plants, for they do better when confined at their roots, and are much less liable to fail. Do not grow them too warm, and fully expose them to the sun. After the middle of next month they will do in cold frames. Shading only draws them up and prevents the wood ripening thoroughly, which is essential to ensure profuse flowering.

Plumbago rosea.—Sturdy plants of this and the variety coccinea in 3-inch pots should now be ready for placing at once into 5 and 6-inch pots. For at least a month or six weeks the plants may be grown on in an intermediate temperature; slight shade may be given during the hottest part of the day, and the shoots pinched about twice more. Before subjecting the plants to cool treatment the flowering growths should be about an inch in length after the last pinching. Watch for thrips, which are very liable to attack these plants if grown in a dry atmosphere and not liberally syringed. These, as well as Euphorbias, will do well in the compost advised for Poinsettias.

Linum trigynum.—If these have been grown up to the present time in an intermediate temperature, the plants will be ready for placing into 6-inch pots. Prepare the plants afterwards for cold frame treatment, and syringe freely twice daily, for this plant is very liable to be attacked by red spider. If they are attacked, syringe thoroughly with a solution of sulphur and water, a 3-inch potful in three gallons of water will be ample. Leave it on the plants for two bright days, which will be ample to destroy the spider, then wash it off with tepid water. Pinch the shoots from time to time as they need it until the middle of next month. Use the compost advised for potting Poinsettias.

Libonias.—Transfer these from small 60's into 4 and 5 inch pots; encourage them to grow for some time in an intermediate temperature until bushy plants have been produced. To flower them well the shoots should afterwards be allowed to extend without pinching, and the plants fully exposed to the sun, with liberal ventilation.

Eranthemums.—Where large plants of E. pulchellum are appreciated, those earliest rooted will be ready for 6 or 7-inch pots; if placed in the first they may when ready be placed in others 2 inches larger. Cuttings may still be rooted, and if pinched once or twice will be useful plants in 5-inch pots.

FLOWER GARDEN.

Bedding Plants.—Seldom has there been a more favourable season for bedding out, the dull showery weather experienced quite obviating the use of the watering pot beyond, perhaps, the first watering. All have commenced active growth, and that, too, in spite of a series of cold nights. When once Pelargoniums, Heliotropes, Ageratums, Calceolarias, Marguerites, Petunias, Lobelias, Pyrethrums, Iresines, Coleuses, Alternantheras, and numerous trailing plants are well established they rarely require any further assistance in the shape of watering, they do better without it in fact. Verbenas and Violas, however, require to be kept moist at the roots, and in addition are much improved by occasional supplies of liquid manure. Most annuals if planted in fairly good soil will do well without being watered, but if extra fine Asters, Zinnias, Stocks, Marigolds, and Dahlias are wanted these ought to be fed with weak guano or some kind of artificial manure, this being either sprinkled over the surface of the soil and watered in, or else dissolved in soft water prior to applying it. Strong doses should not be given or the roots may be injured, and in every case pond water, or any that has been well exposed to sunshine, ought to be used.

Regulating the Plants.—There being no further necessity to water the beds, the next proceeding ought to be regulating the plants so as to present as even a mass of colour as possible. First, however, the surface of the ground ought to be lightly stirred and levelled, this being most easily done with the aid of a small flat hoe. A careful workman ought with this tool to be able to leave the beds with a neat appearance without cutting up any of the plants, and this loosening of the soil is a preventive of drought and cracking. In dry hot positions it is also advisable to mulch the beds with either leaf soil, spent tan, or cocoa-nut fibre. Where there are numbers of beds forming a design, the best effect is produced by a flat surface of colour, and this can easily be done by planting in a sloping directing all stiff-growing subjects, this admitting of their being spread out and pegged down where required. For Pelargoniums rather strong pegs are needed, nothing answering better than the winter prunings from large Apple and Pear trees, the ends of these being pointed and then inserted in the ground so as to enclose and fasten down the strong shoots. Serviceable pegs can be cut from the common Bracken Fern or from shrubberies. Lighter pegs will

answer for Calceolarias, Heliotropes, Verbenas, Iresines, and Petunias, and these may be cut from old birch brooms and faggot wood, or hair pins may be used for the least sturdy growers. Those performing this rather delicate work ought not to step among the plants, but should use boards supported with strong inverted flower pots, and from these reach the centre of the beds. Isolated beds are most effective when rather high and full in the centre, and in this case it is advisable to stake up any that are not so erect as wished for.

Thinning and Transplanting Annuals.—Many annuals sown in the open borders have come up better than usual, and as a consequence there is all the greater need for judicious thinning out. Crowded together they are certainly very gay for a time, but this is a most fleeting display. Freely thinned out the majority will branch strongly and produce finer bloom for a much longer period. Three Mignonette plants are ample in a patch, and Poppies, Balsams, Candytuft, Marigolds, Eschscholtzias, Godetias, Cornflowers, Convolvuluses, Chrysanthemums, Larkspurs, Nasturtiums, Sweet Peas, Salpiglossis, and various other annuals, all ought to be given good room to develope. Very few of them transplant readily, but in showery or dull weather the attempt may be made to move a few, patches being lifted and replanted with the aid of a trowel. When watered and shaded, if need be, those moved may yet flower well.

Pinks and Carnations.—Cuttings or slips of the former ought now to be put in, it being necessary or advisable to propagate a number of plants every season. Old plants will last for many years, but those newly raised are always the earliest, and produce much the finest flowers. In most districts they strike readily in handlights or frames placed against a north wall, and not unfrequently they may be rooted in a similar position without the aid of glass. Where either of these plans fail a slight hotbed should be formed for a frame in a cool position. In any case a layer of about 4 inches of fine loam, and sand freely added, should be placed in the frames or handlights, and where neither of the latter are employed it should be used in preference to the ordinary soil. Select short, well-ripened shoots. Pull these off the old stems, and remove all dead scales or leaves, this being all the preparation needed. Dibble them in firmly and rather closely, water, and keep rather close and shaded during the hottest part of the day till rooted. If partially ripened cuttings of border Carnations can be obtained these may also be prepared and rooted similarly to the Pinks. These, however, may be put in later on, or, better still, layered in July or August. Seedlings when of good size ought to be pricked off thinly in boxes of good loamy soil and kept in cool frames for a time. When sufficiently strong they may be finally planted out in an open border.

Seeds to be Sown.—Now is a good time to sow Pansy and bedding Viola seed in pans or boxes, placing these in a cold frame, or the seed may be sown in the open. In the latter case it will be necessary to mix plenty of leaf soil with the ordinary mould, damping this prior to sowing the seed and lightly covering with fine sandy soil. Choice Primroses and Polyanthuses may also be raised in a similar manner, the plants obtained giving a few flowers next spring. Brompton Stocks may yet be sown, and as a rule the seed will germinate more surely in boxes set in a cool frame, the seedlings being eventually put out in an open border. Hollyhocks and Aquilegias should also be sown now either in the open or in boxes, the seedlings of the former thus obtained being wintered in cold frames, and will flower next year; the Aquilegias may be wintered in the open, these flowering next June.

THE BEE-KEEPER.

NOTES ON BEES.

WINTERING BEES—SPRING DWINDLING.

Numerous plans and devices are recommended by modern writers for successfully wintering bees, and abundant advice is given as to certain manipulations, as if bees did not know how to get along without man interfering with them and their internal economy, at times, too, when it would be wisdom to let them alone, as the acts performed during winter and spring are all detrimental. It is a wonder after all these manipulations that spring dwindling is not more common than it is. What is more absurd than to hear people instructing others about the proper time to start the queen to lay? Bees that are nursing and rearing brood during the winter months by their activity keep up a greater heat in the hive than those having none. With the former, even although the thermometer is some degrees below zero, dead bees will never be found inside the hive, as is often the case with the latter, even when the temperature is much higher.

We are never desirous to have queens laying abundantly during the winter, but are so to have always a moderate quantity of breeding going on, and that, too, in a natural way and condition. To accomplish this a young queen is the first consideration, the hive the second, and the stores the third, and the protection from storm and internal damp the fourth. I have previously made these matters plain, but the external coverings should be the same during all times and seasons, no uncovering at any time, and all these points must go together. Double-cased hives are losing favour with me every year (I never was a lover of them). They are liable to damp, vermin, and rot, that single-cased hives are not, while their extra size renders them unfit for moving about. I have never observed a single writer touch upon this point of bees breeding in winter, but as bee-keepers are thinking for themselves now, we hope they will turn their attention more to Nature than Art, and they will reap more advantage.

THE MANAGEMENT OF SWARMS.

At pages 521-522 "Felix" gives some sensible advice, but I do not agree with him in all he says, so state my reasons for differing in my management regarding the shaking of bees from the receptacle they were at first hived in. The advice given how to introduce bees into their permanent frame hive is but another proof of its defectiveness. However, he has no doubt given the advice faithfully how to put bees into a defective hive, which is far better than the advice given by some to introduce the bees from above, being the most unnatural plan possible. We might as well expect water to run up hill as to expect bees to run down without much bother and risk of their taking wing again, as certainly they are liable to do. When bees are shaken they do not all remain where they fall; many rise, and sometimes all of them, to settle in another or the same place as they did at first, which under any circumstance is provoking.

Some varieties of bees are not so liable to take wing as others when being re-hived, but all of them are more or less inclined to do so, and either to hive anew, partly or whole fly back to where they first alighted or to the old stock. Of course, I mean when the manipulation is done shortly after the bees have been secured, as it is the only commendable plan. Waiting for some hours the risk of the bees taking wing is lessened, with the loss of valuable time. We do not always have our swarms when the sun is shining, very often it is when a heavy thunder shower is coming on, or it may be windy and chilling for the younger bees, and to cause them to take a second flight means the loss of many. In previous articles I have both shown how to secure a swarm and how to introduce one into its permanent hive, where it was impracticable to place them in it at first.

When the bees cluster in a convenient place at first we never hesitate to shake the cluster bodily into a hiving box, but it is seldom we have the opportunity to do so, as most of our swarms go right into the centre of a thicket in the hedge or in some inaccessible place high up upon the dark limb or thick branch of a tree, so that we have very often to lift them in handfuls into the hiving box, or by the aid of carbolic acid cause the bees to retreat to a more convenient spot. By whatever means we secure the bees (we have often difficulties with them) we are sure to have them into a hiving box if not the permanent hive; if in the latter there is no further bother; if in the former it is either placed right under the permanent hive or slid underneath it in an inverted position, and the trap floor allowed to fall, when the bees at once begin to go up without the risk of being overtaken in a shower or of their flying away again; a narrow slit on the top of the box admitting a carbolised feather hastens the ascent of the bees.

Our poles, which can be extended to any convenient length, are admirably adapted for securing a swarm when located high up on a tree where it is difficult to get at it, and cutting the branches is not permissible. The hiving box, which is suspended by a cord to the top of the poles, and carried over pullies for raising or lowering, ought to be very light. The best and lightest material I can suggest is plaited straw bound with wire, ending in a loop on the top, whereby it is suspended. Anything heavy causes unsteadiness in the poles, rendering the task difficult. A swarm of bees is heavy

enough without much additional weight, as the longer the pole the more difficult it is to steady. Four feet is long enough for each pole. The joints should either be with sockets or screws; if the former pins should be pushed through to prevent slipping. The shortness of the poles makes it easier to undo if necessary, and for storing.

Here again carbolic acid assists us. A second light rod with carbolised feathers drives the bees in the direction wanted, or displaces them altogether. When bees are full of honey they are not so flighty as with empty stomachs. Some queens are more lively than others, and where more than one is present the swarm is more liable to fly away, especially so after being hived.

Carniolian bees are perhaps more liable to fly back to their first hiving place than any other variety if shaken, and it is sometimes difficult to secure these bees. The queen's nature of flying from twig to twig or place to place causes the bees to be in many clusters, and when once the queen has alighted upon a place the bees cling as tenaciously to the spot as if the queen was there, and it is often difficult to keep them from it, carbolic acid being effectual, but often clusters of bees will be found dead long after the swarm has been secured. This year it took two days before I could induce the bees of a swarm to cease going back to cluster where the queen had been. When observed I cut the spray or twig and place it in my straw hat, thereby encouraging the bees to enter and drawing them away from the attractive spot, and I sometimes secure the bulk of the bees in it, being light and every way adapted for the purpose, but to shake Carniolian bees from a service to a permanent hive as advised by "Felix" would cause many, if not the whole of them, to return either to the parent hive or to the spot where they first alighted.

Then there is always the risk of having the queen killed by stranger bees when she is exposed from the centre and protection of her own subjects, and where many hives are near each other and swarming general the risk is greater, as many bees are on the wing, but not for working purposes, and it appears to be their nature to kill every queen not their own that falls in their way. My advice to bee-keepers is, however successful they may be at times with the shaking process, abandon it; there are always shoals ahead, but we need not run direct upon a visible rock when the consequence is clear, as it has been long since to—

A Lanarkshire Bee-keeper.

TRADE CATALOGUES RECEIVED.

E. H. Krelage & Son, 19-27, Kleinen Houtweg, Haarlem, Holland.—*Wholesale Catalogue of Bulbs and Plants.*

TO CORRESPONDENTS

*** All correspondence should be directed either to "The Editor" or to "The Publisher." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Suggestions (*Mr. C. & D. G.*).—We are greatly obliged, and the matter will have attention.

Abnormal Mint Growth (*J. H. W.*).—It is peculiar and unusual. We sent it to the Scientific Committee of the Royal Horticultural Society, and it will be referred to in the report of the meeting next week.

Single Pyrethrum (*E. Draper*).—The variety sent is a very good one, but not superior to others in cultivation, nor equal to some. It resembles one named Lord Lansdowne that we have seen in collections of these flowers in the Royal Horticultural Society's Exhibition Hall at Westminster.

Caterpillars on Apple Trees (*William*).—They are caterpillars of the Little Ermine moth, Yponomeuta padella, of which particulars appear on page 479. This appears to have been universally prevalent this year, and much injury has been done in many gardens by the caterpillars. They also attack the Hawthorn and some other trees.

The Crown Knife Cleaner (*H. E.*).—Mr. T. Clarke is the London manager of the Chadborn and Coldwell Manufacturing Company, and not Mr. Chadborn as accidentally stated on page 495. Mr. Thomas Coldwell is the inventor of the article, also of the Excelsior lawn mower, and we understand is the oldest maker of lawn mowers in the United States. He is the President of the Company in question.

Destroying Woodlice (*W. T. S.*).—Cut a raw Potato in two equal parts, scooping out the cut part a little with the knife, and then place the half-Potatoes, with the cut or hollow side downwards, by the side of the eaten Ferns. Every morning treat the woodlice to a boiling bath; you will find them secreted under the Potato and adhering to it in the hollow. As your Ferns are so much eaten examine the plants after dark with a lantern, and you will, not improbably, find some slugs at work; if so, pick them off into a flower pot, and sprinkle some salt over them; or if you have any ducks they will thank you for the present unsalted.

Turf Walls and Furze (*Bailiff*).—We have seen many fences made of turf and covered with Furze. When turf walls are not covered with anything they are often much injured by the atmosphere and the rubbing and butting of cattle. To guard against this they should be planted or sown with the Ulex europæus, or Furze. The roots of this plant will soon penetrate the turf, and tend to bind the wall. The plants not only make a good fence, but afford shelter for cattle, but add to the height of the wall, and give it a formidable appearance. When walls are made for this, the foundation should be 3 feet wide and tapering to 15 inches at top. As the plants advance in growth they should be regularly trimmed with the shears: by proper attention to this they will be prevented from growing too tall and thin at the bottom. If this is annually repeated the plants will be longer preserved in a healthy and vigorous state. Clipping has also a good effect in checking the Furze from spreading over the field. A good and substantial fence may thus be quickly formed on a soil that will not produce a biding fence of any other kind.

Thinning Grapes (*J. E.*).—The illustration referred to is not what you suppose. You can only, so far as we know, find what you wish in Barron's "Vines and Vine Culture," which can be had from this office, post free for 5s. 3d. As you are interested in Vine culture you would find the amount so expended a good investment. Thinning cannot commence too soon after the berries are set, and the work should be completed before they touch each other. Do not take many from the upper part of the top shoulders, but rather thin from the under part and the centre of the bunches. A small stick in one hand for raising up the shoulders, and a pair of Grape scissors in the other, enables the work to be done, as it should be, without touching the berries. The number to be removed can only be determined by the "set" and by the size the varieties attain when ripe, Gros Colman requiring much more room than Foster's Seedling for instance. If you commence thinning when the berries are very small, those retained may be at a sufficient distance apart for the tip of your little finger passing between them without rubbing the fruit. Thin out the small as far as possible, leaving those of uniform size to swell to maturity.

Vines Scorched (*F. J.*).—Judging from the leaves and berries sent we suspect the air of the vinery is kept too dry, and possibly the roots of the Vines also, but the main cause of the injury is faulty ventilation. If you had described your method we could possibly have told you where you err. It is certain that having the ventilators close till the thermometer registers 80° or thereabouts in the morning, then throwing open the top and front ventilators to reduce the heat, will cause scorching and shrivelling. The most precise instructions have been repeatedly given, and it is impossible to repeat them just as we are going to press. Briefly, the top ventilators should never be entirely closed, and should be opened a few inches wider half an hour after the sun shines on the house in the morning, or as soon as a shaded thermometer registers above 65°; at every 5° rise admit more air; then, when the top ventilators are wide open, if the temperature threatens to rise above 80°, open the front ventilators slightly, increasing the openings to prevent the heat as shown by the shaded thermometer exceeding 85°. Damp the house frequently with the increasing heat. See also "Work for the Week." We suspect you are drying the air too much by excessive front ventilation. There is not much difference in the time of ripening of the two Potatoes as you will soon find out.

Fungus on Peach Trees (*Granger*).—The scraps you send are quite inadequate for enabling anyone to understand the actual condition of your trees, unless, indeed, there are no better leaves on them than those before us. We can scarcely think that such is the case, but if it is the trees are practically beyond recovery. One leaf is blistered, and both infested with fungus. Blistering is the most prevalent during cold springs when dry piercing winds prevail, and fungus follows the blister. It may possibly cause it in some instances, but is, we think, usually a result. You ought to have endeavoured to subdue the fungus

long ago by syringing with softsoap and sulphur solutions that have been so frequently recommended, and these failing you could have tried sulphide of potassium or Jeyes' remedies as advertised. No matter what kind of soil you provide for the roots, it is impossible the trees can grow in it if the foliage is destroyed. If you wish to send your Carnation to one of the Royal Horticultural Society's meetings you can obtain the requisite instructions from Mr. A. F. Barron, Chiswick. The value depends very much on the habit and floriferous nature of the plants. The bloom itself is not strikingly meritorious.

Fungus on Shrub (*R. V. A.*).—We have examined the specimen sent. There is abundant evidence of an attack upon the twigs by some scale—*i.e.*, either a coccus or aspidiotus. As to the particular species we cannot say. There are not any living insects, but dried shields and dross. Fungoid growths frequently occur upon insect refuse, and we have seen them thickly on the cast off skins of caterpillars and on old cocoons of moths. Syringe forcibly and thoroughly with a solution of softsoap and petroleum, made by dissolving 2 ozs. of softsoap with a lump of soda the size of a nutmeg in a gallon of boiling water, stirring in very briskly when hot a small wineglassful of petroleum. If the mixture is supplied at a temperature of 120° it will be the more effectual, holding the barrel of the syringe in a thickly gloved hand. The work should be done soon enough in the evening for the shrubs to be dry before night, as if wet in the morning and hot sun follow the leaves may be scorched. If the roots are in dry poor soil make some holes here and there for holding liquid manure and conveying it to the roots. Insects are prone to attack enfeebled growths, and the sprays sent do not indicate vigour. By far the greater number of replies published in this column are of interest and service to many besides those who elicit them.

Early Rhubarb (*Suffolk Vicar*).—We thank you for the stalks of the "hardiest, earliest, and sweetest Rhubarb grown anywhere in this country," and which you appear to feel justified in investing with a distinctive name and selling roots of the variety at a high price, 7s. 6d. each small, 15s. each large. May we advise you to send a fair sample of the stalks, say a dozen, with leaves, for examination by the Fruit and Vegetable Committee of the Royal Horticultural Society before carrying out your project? If the variety is considered by the Committee distinct from others in ordinary cultivation, you can then name it and make the best you can of it; but if it should prove to be identical with an existing variety well known and recognised, you will not be placed in a very pleasant position, as it is a rather serious matter sending out old varieties of anything under new names, and at prices that lead the public to believe they are novelties. We have read your circular and letters with great care, and should be very pleased to aid in distributing a really new Rhubarb possessing distinct advantages, but we cannot regard your experience as adequate for determining the point, and suggest an easy course that we hope you will follow. We admit the variety to be distinct from the St. Martin's, but that is not the earliest Rhubarb in cultivation. The next meeting of the R.H.S. Committees will be held on July 10th, and anything reaching the Secretary at 111, Victoria Street, Westminster, the night previous, will be placed on the table for examination by competent horticulturists, glad to recognise anything new, distinct, and good that may be put before them.

Ammonia in Rain (*J. W., Leeds*).—No doubt you are right. Dr. Storer says fresh rain water may contain from one to three-millionths of its weight of ammonia; fog and dew, from two to six millionths; and snow and hail, about as much as rain on the average. Those portions of rain that fall at the beginning of a storm or shower generally contain a larger proportion of ammonia than those which fall subsequently. The first portions of water wash the layer of atmosphere between the cloud and the earth, and collect almost the whole of the ammonia that was contained in it. The rain that falls afterwards merely dilutes the ammoniacal solution first obtained. Towards the close of a long-continued rain the water that falls is wellnigh absolutely free from ammonia. The rain water collected in cities contains far more ammonia than that which falls in the country; as much as thirty parts of ammonia in a million parts of water have been observed. It has sometimes been noticed, also, that the amount of ammonia in rain may be comparatively large when the rainfall occurs after long-continued dry weather. In the year 1855 Mr. Lawes erected a large rain-gauge at Rothamsted, having a surface of one-one-thousandth of an acre, and the waters collected in it have been analysed from year to year, and even from day to day at times. Warington has recently reported that the average amount of ammonia nitrogen in the water of this rain-gauge is about 0·3 part in 1,000,000 parts of water. But the amount of ammonia varies widely in the waters of different showers, so that the amount of ammonia nitrogen ranges from 0·043 to 5·491 parts to the million. Warington computes that about 2½ lbs. of nitrogen in the form of ammonia fall upon an acre of land in one year at the locality in question. In addition to the ammonia nitrogen, about a pound falls as nitric acid and another pound in organic combination, making altogether about 4½ lbs. of nitrogen to the acre. Earlier observations, obtained by rather less accurate methods of analysis, gave larger amounts of ammonia. Thus Way, in 1855, found 7 lbs. of ammonia to the acre, and, in 1856, 9½ lbs., in the waters of the Rothamsted gauge, which amounted to rather more than 600,000 gallons each year. German observers obtained in their turn 6¾ lbs. and 9¾ lbs. of ammonia in yearly rainfalls of 400,000 and 500,000 gallons.

Apples Wearing Out (*Man of Kent*).—You appear to be possessed with the Knightian theory, which was not well founded. It is referred to by Dr. Hogg in the "Fruit Manual" as follows:—"Towards the end of last century Mr. Thomas Andrew Knight entertained a theory that the Golden Pippin, and all the old varieties of English Apples, were in the last stage of decay, and that a few years would witness their total extinction. This belief he founded upon the degenerate state of these varieties in the Herefordshire orchards, and the opinion that no variety of Apple will continue to exist longer than 200 years, after which period the original tree and all its progeny will fall to decay. It would be needless to enter into any further discussion upon a subject concerning which so much has already been said and written, as there is sufficient evidence to confute that theory. The Pearmain, which is the oldest English Apple on record, shows no symptom of decay, neither do the Catshead, London Pippin, or Winter Quoining, those only of the old varieties having disappeared from our orchards which were not worth perpetuating, their places being supplied by others infinitely superior. It was towards the end of the last century that this doctrine was first announced, and though many of the old diseased trees of the Herefordshire orchards of which Mr. Knight spoke have passed away, we have the Golden Pippin still in all the luxuriance of early growth, where attention has been paid to its cultivation and it is grown in a soil congenial to it, and it exhibits as little indication of decay as any of the varieties which Mr. Knight raised to supply the vacancy he expected it to create. But this alarm of Mr. Knight for the safety of the Golden Pippin, and his fear of its extinction, were based upon no new doctrine, for we find Mortimer a hundred years before equally lamenting the Kentish Pippin. After speaking of manures, &c., for the regeneration of fruit trees, he says, 'I shall be glad if this account may put any upon the trial of raising that excellent fruit the Kentish Pippin, which else, I fear, will be lost. For I find in several orchards, both in Kent, Essex, and Hertfordshire, old trees of that sort, but I can find no young ones to prosper. A friend of mine tried a great many experiments in Hertfordshire about raising them, and could never get them to thrive, though he had old trees in the same orchard that grew and bore very well. I likewise tried several experiments myself, and have had young trees thrive so well as to make many shoots of a yard long in a year, but these young shoots were always blasted the next year, or cankered; which makes me think that the ancients had some particular way of raising them, that we have lost the knowledge of.' Although this was written in the beginning of last century, we have the Kentish Pippin still, as vigorous and healthy as ever it was."

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. —(*H. H.*).—Cratægus coccinea. (*Somerset*).—1, Festuca duriuscula; 2, Festuca ovina; 3, Bromus sterilis; 4, Bromus arvensis; 5 and 6, Bromus mollis. (*S.*).—1, Centaurea montana; 2, Veronica spicata; 3, Saxifraga ceratophylla.

COVENT GARDEN MARKET.—JUNE 27TH.

Outdoor Strawberries have now made their appearance, principally from the neighbourhood of Southampton. Supplies good, with trade more active.

CUT FLOWERS.

	s.	d.		s.	d.		s.	d.		s.	d.
Abutilons, 12 bunches ..	2	0	to	4	0	Mignonette, 12 bunches	3	0	to	6	0
Anemones 12 bunches ..	0	0		0	0	Pansies, 12 bchs	1	0		4	0
Arum Lilies, 12 blooms ..	2	0		4	0	Pelargoniums, 12 trusses	0	6		1	0
Azalea, 12 sprays	0	0		0	0	,, scarlet, 12 trusses	0	4		0	6
Bouvardias, bunch	0	6		1	0	Polyanthus, 12 bchs ..	0	0		0	0
Camellias, 12 blooms ..	0	0		0	0	Pyrethrum, doz. bunches	3	0		6	0
Carnations, 12 blooms ..	1	0		3	0	Ranunculus, doz. bunches	2	0		4	0
Cowslips, 12 bunches ..	0	0		0	0	Roses, Red, 12 blooms ..	1	6		2	6
Cyclamen, 12 blooms ..	0	0		0	0	,, (outdoor), 12 bchs	6	0		12	0
Daffodils, Double, 12 bchs	0	0		0	0	,, (indoor), dozen ..	0	6		1	6
,, Single, 12 bchs	0	0		0	0	,, Tea, dozen	1	0		2	6
Daisies, 12 bunches ..	2	0		4	0	,, red, dozen (French)	0	9		1	0
Epiphyllum, 12 blooms ..	0	0		0	0	,, yellow	2	0		4	0
Eucharis, dozen	3	0		6	0	,, (Moss), French, 12 bunches	6	0		12	0
Gardenias, 12 blooms ..	1	6		4	0	Spiræa, bunch	0	6		1	0
Lapageria, coloured, 12 blooms	1	0		1	6	Stephanotis, 12 sprays ..	1	6		3	0
Lilium longiflorum, 12 blooms	2	0		4	0	Stocks, 12 bunches	1	6		4	0
Lily of the Valley, 12 sprays	0	0		0	0	Sweet Peas, dozen	4	0		8	0
Lily of the Valley, 12 bunches	0	0		0	0	Tropæolum, 12 bunches	1	0		2	0
Marguerites, 12 bunches	2	0		6	0	Tuberoses, 12 blooms ..	0	6		1	0
						White Gladiolus, 12 sprays	0	9		1	6
						White Lilac, per bunch ..	0	0		0	0
						,, ,, French ..	4	0		6	0

PLANTS IN POTS.

	s.	d.		s.	d.		s.	d.		s.	d.
Aralia Sieboldi, dozen ..	6	0	to	12	0	Fuchsia, dozen pots ..	4	0	to	12	0
Arbor vitæ (golden) dozen	12	0		24	0	Genista, per dozen ..	0	0		0	0
Arum Lilies, dozen	6	0		12	0	Heliotrope, dozen pots ..	4	0		8	0
Bedding out plants in variety, per dozen ..	1	0		2	0	Ivy Geranium	4	0		8	0
Calceolaria, per dozen ..	4	0		9	0	Hydrangea, dozen	9	0		18	0
Cineraria, dozen	0	0		0	0	Lilies Valley, dozen ..	0	0		0	0
Coleus, dozen	3	0		6	0	Lilium Harrisii, doz. pots	24	0		42	0
Deutzia, per dozen ..	0	0		0	0	Lobelia, per dozen	4	0		6	0
Dracæna terminalis, doz.	30	0		60	0	Marguerite Daisy, dozen	6	0		12	0
,, viridis, dozen ..	12	0		24	0	Mignonette, per dozen ..	4	0		8	0
Erica, various, dozen ..	9	0		18	0	Musk, dozen pots	2	0		4	0
,, ventricosa	18	0		24	0	Myrtles, dozen	6	0		12	0
Euonymus, in var., dozen	6	0		18	0	Nasturtiums, per dozen ..	4	0		6	0
Evergreens, in var., dozen	6	0		24	0	Palms, in var., each ..	2	6		21	0
Ferns, in variety, dozen	4	0		18	0	Pelargoniums, dozen ..	6	0		18	0
Ficus elastica, each ..	1	6		7	0	,, scarlet, doz.	3	0		6	0
Foliage Plants, var., each	2	0		10	0	Spirea japonica, doz. ..	6	0		12	0
						Stocks, per dozen	3	0		6	0

FRUIT.

	s.	d.		s.	d.		s.	d.		s.	d.
Apples, ½ sieve..	0	0	to	0	0	Oranges, per 100	4	0	to	9	0
Nova Scotia and Canada barrel	10	0		18	0	Peaches, dozen	6	0		12	0
Cobs, 100 lbs.	45	0		0	0	Pears, dozen	0	0		0	0
Grapes, per lb...	2	6		3	6	St. Michael Pines, each	3	0		5	0
Lemons, case	10	0		15	0	Strawberries, per lb. ..	1	0		2	0

VEGETABLES.

	s.	d.		s.	d.		s.	d.		s.	d.
Artichokes, dozen	2	0	to	3	0	Lettuce, dozen	0	9	to	1	3
Asparagus, bundle	1	0		4	0	Musbrooms, punnet ..	0	6		1	0
Beans, Kidney, per lb. ..	0	6		0	9	Mustard and Cress, punt.	0	2		0	0
Beet, Red, dozen	1	0		2	0	New Potatoes, per cwt...	8	0		14	0
Broccoli, bnndle	0	0		0	0	Onions, bunch..	0	3		0	0
Brussels Sprouts, ½ sieve	0	0		0	0	Parsley, dozen bunches	2	0		3	0
Cabbage, dozen	1	6		0	0	Parsnips, dozen	1	0		0	0
Capsicums, per 100 ..	0	0		0	0	Potatoes, per cwt... ..	4	0		5	0
Carrots, bunch	0	4		0	0	,, Kidney, per cwt.	4	0		0	0
Cauliflowers, dozen ..	3	0		4	0	Rbubarb, bundle	0	2		0	0
Celery, bundle	1	6		2	0	Salsafy, bundle	1	0		1	6
Coleworts, dcz. bnnches	2	0		4	0	Scorzonera, bundle ..	1	6		0	0
Cucumbers, each	0	4		0	7	Shallots, per lb.	0	3		0	0
Endive, dozen	1	0		2	0	Spinach, bushel	1	6		2	0
Herbs, bunch	0	2		0	0	Tomatoes, per lb.	0	6		0	10
Leeks, bunch	0	3		0	4	Turnips, bunch	0	4		0	0



MILK.

In our article upon Farming Reform it was laid down in general terms that for the ordinary farm dairy neither pedigree nor imported animals were required, but rather well-bred cows, either pure or cross-bred, of local breeds, such as are to be had in every county. It appears desirable to qualify this statement by insistence upon the importance of the really careful selection of such cows. For example, we should never recommend the ordinary pure-bred Sussex cow for the dairy, for it is a large fleshy animal yielding very little milk, but ripening so early for the butcher that many gentlemen in that county have two distinct herds—one of Channel Island cows for milk, another of Sussex cows for beef. This is all very well from a picturesque point of view, but a tenant farmer requires in his cow a fairly lusty condition combined with an abundant yield of rich milk. Such desirable points, are, we believe, capable of development in every breed of cows; but, mark this! they must be developed by careful selection, for the development of such points may occasionally be obtained by accident, but, as a rule, it is done by breeding from cows having some points of superiority over others. Take again, for example, the Shorthorns. Here we have results from selection which give distinct classes of this famous breed. In one herd of them we find beef and nothing else, in other plenty of deep milkers. It must be owned the milk is frequently of poor quality, but then dairy Shorthorns are generally kept for an abundant yield of milk for sale, without regard to quality. Plenty of milk is wanted, and stimulating food is used to induce the cows to give it, yet if quality of milk were required it could soon be imparted.

Food has doubtless very much influence upon the milk yield. It was proved to demonstration long ago that by judicious feeding the milk yield of a cow can be almost doubled; and let it not be forgotten that rich food generally means rich milk. Cows have been so well bred and well fed that each of them has produced 500 lbs. of butter in a year, but that is far beyond the ordinary quantity, for it must not be forgotten that it requires from two to three gallons of milk to produce a pound of butter. Another word about Shorthorns. From a dairy point of view they may be said to have deteriorated from over-selection, for three-quarters of a century ago the Durham cows, from which the Shorthorns have descended, were celebrated as much for the quality of milk as for their capacity to fatten quickly.

In the selection of dairy cows it should be remembered that soft fine hair and a smooth skin generally indicate high quality in the milk, but there are exceptions to this as to all rules. The class of cows we recommend for tenant farmers—that is to say, cows good for the dairy and fattening as well, are always kindly animals in excellent condition, with a soft skin and tolerably lusty condition. Remember the selection is not solely for quantity, but quantity and quality of milk in perfect combination. A very deep milker is usually "a bag of bones;" the entire economy of the animal is given up to the secretion of milk, but the milk is often of superior quality. One such cow we had that continued a wonderful yield of milk to the last, and we were so accustomed to see her in low condition that we had no idea how severely the system was taxed till one morning she was missed at milking time, and was found in a thicket dead.

It has been laid down by a high authority on dairy farming that a dairy cow giving no more than 300 gallons of milk in a year is unprofitable. This low rate of yield may arise from careless breeding or careless feeding. If the former, the cow is not worth keeping for the dairy, if the latter an improved dietary is the remedy. No doubt very many dairy cows are sadly underfed even when turned out upon pasture. We like to see cows that are milked at 6 A.M., and at once turned out to grass lying down and ruminating by 10 A.M. But if on the contrary they have to keep wandering the greater part of the day in search of food, the yield of milk is unlikely to be so abundant, or the quality so high as it ought to be. A cow requires some 80 lbs. of food daily, yet many a cow probably does not get above half that amount. Well has it been said that poor land produces poor milk, and it is ridiculous for any farmer to attempt keeping dairy cows upon insufficient means. We have a neighbour who has three cows—wretched starvelings all of them, yet if he had only one well fed animal he would certainly obtain more and better milk than he now has from three. We hope these general hints may be useful to our readers, but to any of them requiring more particular information we will gladly be of use.

WORK ON THE HOME FARM.

Farming work is so much affected by weather that no inflexible rules can be laid down for general guidance. In point of fact we wait upon the weather and adapt our plans to it as best we may. The "dripping June" weather still prevails, but we have had some trying alternations of cold—so trying that newly shorn sheep have suffered, and we have done what we could to afford them some shelter. Wheat coming into ear, as well as winter Oats, is short in straw, but we hope all corn will prove heavy in ear, for though somewhat backward in growth it is full of promise. The early crop of Peas which we mentioned in our last work note proved profitable to the grower, who realised 10s. per bushel for it at a local market. It is precisely the man who farms well, and is on the alert to take advantage of every opening, who continues to thrive. Much Rye Grass and Sainfoin has been mowed for hay, but the dull weather has retarded carting, and most of it is still out upon the land. The showery weather promotes free growth in the late grasses, and the haymaking is kept back, both by weather and a desire to secure a little more bulk per acre. Care must, however, be taken not to leave the grass unmown till seed is fully developed, or there will be much loss of quality in the hay. Just as the Grass is passing out of the flowering stage is the best time to mow, but where some hundreds of acres has to be mown this is not an easy matter, but by the exercise of a little care all the grass can usually be had in fair condition for hay. Enthusiastic makers of silage declare there need be no more roots grown, and therefore a considerable saving may be effected. We never advocate extreme views, and certainly we do not propose to discontinue growing some roots, but we have curtailed the average of roots considerably, and take care to cultivate the remainder as well as possible. Much land is wasted in root culture by having the rows too far apart. The only good reason for this is upon foul land to afford ample space for the free use of horse hoes between the rows; but when the land is clean we prefer having the rows as close as possible, and sowing upon the flat, not on the ridge. Very little thought is, we fear, put into such matters; custom and habit insensibly affect farming work, yet a little thought sometimes suggests better methods.

MANURES FOR PASTURES.

THE DYSON'S WOOD EXPERIMENTS.

Dyson's Wood, Kidmore, Oxon, is the residential estate of Mr. Martin J. Sutton. The district is charmingly rural, the estate well wooded, and the ground agreeably, in some places rather boldly, undulated. The commodious and substantial residence is pleasantly situated among the trees, and the well-kept

lawn, with flowers and shrubs surrounding, betoken a cherished home. One of the walls of the building is quite covered with a splendid Gloire de Dijon Rose bearing a wealth of lovely blooms, and the most attractive flower bed was a mass of seedling Pansies of a superior strain. Beyond are the fields, of which glimpses are obtained between the trees, and in some of those fields are the experimental plots that a number of practical and scientific agriculturists inspected on Wednesday, the 21st inst.

In the spring of 1886 Mr. Martin J. Sutton, aided by Dr. J. Augustus Voelcker, arranged a series of experiments on permanent and temporary pastures for the purpose of ascertaining the effect of certain manures, alone and in combination, on crops of grass. The quantities were such as might reasonably be applied in ordinary agricultural operations, and such as any grass land farmer would be willing to pay for in the event of their proving profitable. The trials were arranged in six fields on poor brashy soil resting on chalk, and therefore particularly suited for these experiments. In 1886 six plots were set apart in each field. No. 1 was not manured at all, and is the standard with which the other plots are compared. In 1887 twelve more plots were added to four of the fields, and the same rule followed applied to these plots also. Every plot measured exactly 100th part of an acre, and was enclosed with galvanised iron wire. This separation of the several plots has been maintained from the commencement of the trials. Each group of plots is surounded with hurdles at a suitable distance to keep off cattle and ground game. Extreme care has been taken in every field to choose a portion which fairly represents the whole in herbage and in aspect. The manures were selected and approved, and several of them were analysed by Dr. Voelcker, and when sown screens were employed to keep every particle within its proper boundary. Weekly inspections have been made through the spring and summer of each year, and the progress of the various grasses and Clovers in every plot carefully recorded. Immediately each crop was cut it was weighed, then dried on its own plot, and finally weighed as hay. The drought from which the neighbourhood suffered up to the end of the first week of October, 1886, caused the aftermath to be exceedingly slight in that year, but the second crop was cut, carefully weighed, dried artificially, and weighed again as hay. In 1887 the prolonged drought, followed early by severe and autumnal frosts, proved so detrimental to the aftermath that it was a failure. That is the explanation given by Mr. Sutton in his carefully tabulated record of the trials, printed in manual form, and the work is highly worthy of perusal.

The object of the experiments is wholly educational and intended to show the effects of different manures on existing pastures with the view of ascertaining which could be profitably applied, for it is a fact that money can be lost by injudicious expenditure on fertilisers, while on the other hand wise investments may be made in them for pastures and other crops; but the experiments under notice apply to pastures alone, a subject to which Mr. Sutton has given great attention, and his knowledge is embodied in his standard work thereon. The cost of the manures per acre as represented by each plot in the fields is given, and the loss or gain resulting clearly stated. This, the third season's experiments, show two things very clearly. First that the real value of manures cannot be tested in one year because of the differing residues and their influence on the succeeding crop, and secondly that a combination of nitrogenous with mineral ingredients is necessary for achieving the best results, because as the plots demonstrate, where either nitrate of soda or sulphate of ammonia are used alone, a strong growth of the coarser grasses are favoured at the expense of Clovers and full and fine bottom herbage; and where those quick manures are excluded the reverse occurs, and the crops as a rule lose weight. Good farmyard manure contains all the elements, with humus, hence proves its value at Dyson's Wood. It did not, however, show this the first year, for every plot which had a dressing at the rate of ten tons per acre in the spring of 1887 resulted in a loss that year, but the same plots this year, to which nothing else has been applied, will show a substantial gain, as they are among the best in the series. But it must be borne in mind the manure was from covered yards and cake-fed animals, much so-called farm manure that is used on land being delusive—a mere apology for the genuine article. The advocates of "muck" were a little jubilant after inspecting the crops, and not without reason; but in very few instances is it so good as in the sample used, or produced in sufficient quantity for adequately enriching the ground; and, as Dr. Voelcker explained in his most interesting address, chemical manures can be profitably used either in addition to it, which he advocates where practicable, or instead of it in its absence.

It may be stated as a rule throughout the experiments that nitrate of soda is somewhat a brisker stimulant than sulphate of ammonia, inasmuch as the grass is riper, but it is doubtful if the crops will weigh heavier, and the results this year will perhaps show that there is a little more "wear" in the latter than the former. It should be said that in some of the series of plots this point will be tested, as nothing has been applied to them since 1886, and some of them will be left without further dressings. Possibly nitrate of soda, broadly speaking, may be preferable for dry soils and districts, sulphate of ammonia for those of a wet, cold nature. In some of the plots basic cinder is placed in comparison with coprolites, both mixed with kainit, to the apparent disadvantage of the former, the superphosphate of lime plots also comparing favourably with the cinder. Bones dissolved, boiled, and raw, are in comparison with no great difference in the crops judging from appearances, but those dressed with the first-named are perhaps the best in three cases out of four. A good profit was derived last year with nitrate of soda and muriate of potash, an outlay of 17s. 6d. per acre yielding a gain of £2 16s., and this year's crop, without a further dressing, is very promising both in bulk and quality, as it shows a fair mixture of Clover. The tide appears to be rising in favour of muriate of potash over the sulphate or kainit. The guano plots are weak, this "hot" manure not being good for dry soils in dry seasons. Further reference will be made to these valuable and suggestive experiments, and deductions drawn from them and others by our able agricultural coadjutor.

At the close of the inspection upwards of thirty gentlemen were entertained at luncheon by Mr. Sutton, who gave a cordial welcome to all, and invited a free informal discussion on the whole subject of manuring. Expressions of opinion were delivered by Dr. Fream, and Messrs. Simmons, Farmer, Hunter, Pringle, Luckhurst, Caird, Milton Druce, and others, Dr. Voelcker summing up the various suggestions and analysing the observations in a masterly address. A rather heavy and prolonged shower suggested that method of utilising time, and though much of interest was doubtless missed outside which would have been seen had the afternoon been fine, yet none appeared to regret the rain keeping them in the marquee, and perhaps Mr. Sutton will feel the desirability of holding a similar parliament of professors, cultivators, and students (of which a number attended from the Downton Agricultural College) on a future occasion.

BRITISH TOBACCO.

BEFORE the cultivation of Tobacco in Britain is absolutely condemned we ask to be heard in its defence, inasmuch as we have spent several hundred pounds in the interest of the British agriculturist with a view to establish the fact whether Tobacco could or could not be grown here, and we believe the evidence we offer will more than justify further experiments. With regard to the manufactured Tobacco sent out by Messrs. Cope, in common fairness it ought to be understood that no foreign element in the shape of scents or flavourings has been used, whereas we are given to understand that the custom prevails to add some form of flavouring or perfume to the various grades of Tobacco sold by the manufacturers. It is therefore not surprising that after the public taste has been educated to the use of the blended and artificially flavoured article it should object to the novel character of the real and pure Tobacco. We maintain that the fairer test would have been, either to have given the artificial assistance usually added to the foreign Tobacco, or to have sent examples of the latter, pure and dressed in the same way as the British grown.—JAMES CARTER & Co.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 33′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				Rain.
1888. June.	Barometer at 32° and Sea Level.	Hygrometer. Dry.	Hygrometer. Wet.	Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature. Max.	Shade Temperature. Min.	Radiation Temperature In sun.	Radiation Temperature On grass	
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 17	30.067	51.8	48.2	N.E.	56.4	54.7	47.8	70.9	46.7	—
Monday..... 18	30.189	50.2	46.1	N.	55.3	56.3	43.9	75.2	38.7	0.049
Tuesday 19	30.207	50.6	48.0	N.	54.6	54.7	46.2	67.2	43.7	0.016
Wednesday.. 20	29.994	51.7	50.4	N.	54.1	57.7	45.9	72.8	46.1	0.093
Thursday.... 21	29.979	57.1	55.2	N.	53.6	67.7	47.7	106.7	49.3	0.231
Friday 22	30.064	58.3	57.1	N.E.	54.8	73.4	54.2	106.5	54.3	—
Saturday 23	30.165	59.6	55.3	N.E.	56.2	70.6	51.1	118.9	45.7	0.119
	30.095	54.2	51.5		55.0	62.2	48.1	88.0	45.9	0.479

REMARKS.

17th.—Overcast all day.
18th.—Cloudy, and very cold throughout.
19th.—A little rain early; dull and raw day; showers at night.
20th.—Dull early, wet till 3 P.M., then showery, with one glimpse of sun; bright moonlight night.
21st.—Dull, with occasional slight showers; heavy rain, with distant lightning and thunder, at night.
22nd.—Dull morning, fair afternoon, with some sunshine.
23rd.—Fine and bright: heavy rain after midnight.

An uncomfortable week, with some very cold days, the mean temperature being scarcely that due to the middle of May. On several nights the 9 P.M. temperature lower than has sometimes been observed in January.—G. J. SYMONS.

ROYAL BOTANIC GARDENS
12 FEB 1993
RETURNED
FROM BINDING